# WHAT WOULD YOU DO?

LOVELY LI'L LAPTOPS





56 branches throughcent the four mains Hawaiian islands this spring, it made a carrier choice that might seem strange to anyone frustrated with poor service from his cable TV company. The bank chose Oceanic Cable, the local cable affiliate of New York-

based Time Warner Inc.

New Economy a good fit

Pipelines, production plants.

ical Co. bosses all the brick-

and-mortar assets of an Old

Economy dinosaur. Yet its Web

site, Eastman.com, racks up an

average of 3 million hits per mooth, representing \$200 mil-

Along with several other

ochemicals, Eastman Chem-

BY JULIA KING

for would-be dinosaurs

obtain broadband Internet access was to subscribe, through Oceanic, to a corporate high-speed cable LAN service called Road Runner The message is clear, Cable is going corporate

Ernest Takahashi, informa tion systems director at Honolulu-based Wilson, Okamoto CHEMICAL SECTOR LEADS F-BUSINESS

tronics and financial services.

industry is somewhat in the

lead is that it's a highly inter-

"One reason the chemical

structural engineering firm. said he decided to use Oceanic's cable LAN service because it provided the wide band width the company needs to send large CAD drawing files that are megabytes in size .. not just on the island, but to

the mainland as well." Corporate Cable, page 105

# SUPPLY CHAINS

Kmart, Caterpillar top i2 to handle IT overhauls

BY MARC L. SONOIN

Citing a supply chain with no coordination, accountability or effective means of tracking inventory Kmart Corn CFO the \$435 billion U.S. chemical Chuck Consway last week outsector as one of the most suclined the company's plans for cessful online industries, right overhauling its information up there with high-tech electechnology systems to handle

the stresses of conducting Web-enabled business. "We're not where we need to be," he said of Kmart's online

### Chemicals, page 16 Supply Chain, page 16 CIOs: RECRUIT TRAINABLE ROOKIES

Perks, training count in a tight labor market

BY PATRICK THIBODEAU In a tight and competitive information technology labor market, companies looking to attract and retain employees have to hire raw talent, invest heavily in training and offer

need are people with potential, with love for their technol and the ability to learn quick ly." At PBS, Mendes added,

# AVOIDING ASP

BEWARE: The business models for application service providers are changing weekly, and half of ASPs are going to fail. Gary H. Anthes talks with early customers to identify the hard questions that CIOs should ask to avoid an ASP nightmare. One hint: Focus less on the A in ASP and more on the S. including how service levels will be measured. Story begins on page 80.

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buckets in the digital economy, Eastman is urning out to

lion in orders last year.

forming into so electronic

would-be rust

be surprisingly swift in transemployment perks such as flexible hours, telecommuting

### and job sharing, a group of CIOs said last week.

"You actually don't need people with a lot of experience - the technologies are changing so fast lanywayl," said Andre Mender, CIO at PBS in Alexandria, Va. "What you

meeting IT employment need



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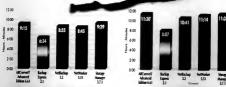
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Tom bvanskt, semor product reviewer, Windows 2000 Mugazine Lab Report (June 2000)



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# FLORIDA'S

A beaming internat economy and a presimity to the growing markets of South America are causing IT opportunities to explode in South Florida, but life there's not as slow and eace as you'd think, Page 90

# COMPUTERWORLDTHISWEEK

### NEWS

# 6

### UNISYS PLANS to cut staff following an earnings plummet but promises to focus on Win 2k Datacenter machines, of

- which it is the sole provider.

  TOYOTA AIMS to webify its cars and supply chain using
- cars and supply chain using wireless networks and tight e-commerce ties to dealers.

  FCC BLASTS "spectrum
- squatters" that impede development of wireless Web applications.
- ONLINE RETAIL sales may double this year, as e-retailers scramble to prepare for the onslaught.
- 12 MICROSOFT'S EXCHANGE 2000 poses integration problems, but users say it may be
- 14 IBM UNVEILS its version of a high-end, more scalable Unix server following similar debuts by Sun and HP.
- OIL COMPANIES TEAM up in venture to develop vendor-neutral collaboration technology.
- 24 UN VOLUNTEERS BUILD IT in the Third World, helping the poor with medical care and education, and wiring local artisans for e-commerce.

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- doubt it will happen.

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### **OPINIONS**

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      EMEROINO MARKETS

      IT WORKER DEMAND hits all-time high on Florida's southern shores.
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### ONI IN

Money isn't everything. In her Workhore Watch column, Carrier Gampy's Barbara Bomolidi writes about nonfinancial incentives that can make your employees happy, www.computerworld.com/

www.computerworld.com/ workforce

It's going to be a while before wire less ecommerce becomes a viable way to make money, news editor

Anne McCrory reports from the re-

way to make money, news editor

Anne McCrory repurts from the recent mobile-commerce conference
in Phoenix. Check it out in the

E-Commerce Community, www.

computerworld.com/ecommerce

Also in the E-Commerce Community, reader Deb Boldmin chides Web sites for not paying closer attention to pricing cross, www.computerworld.com/ecommerce

- ect's success by only its shortterm benefits.
- 64 JOE AUER says good notetaking is crucial when you're negotiating with an IT vendor
- 106 FRANK HAYES says you should regularly check the different ways Web surfers might guess at your company's domain name, or it could cost you customers.

# AT DEADLINE

### Dell Recalls Batteries suter Corp. in Round Rock

Texas, last week arrownced a volun-tary recall of 27,000 butteries that it said could short-circuit, heat up ived one report of a fire med by the defect. The batteries to made by Sanyo Electric Co. in

### Visa Launches Site For Merchants

f, last week issected a new rail Data Security Web sits for ng policies for protecting cor ent sites. The Web site

### Private Sector Gets Federal Spectrum

of airomes allocated for commer-sial use will support a wide range o

### Short Takes

ny retailer BLUEFLY INC. her set for as in ent infusion of up to \$15 mil-ARTHERS LLC. . . . More than 300 obversities across North America ring donated Lines polt-

# Unisvs Plans Job Cuts After Weak Quarter

But says Win 2000 Datacenter unaffected

Unisys Corp. last week said it

plans to cut its workforce by more than 1000 and deemphasize some low-margin businesses and products in the wake of a big drop-off in its earnings for the third quarter. But Unisys assured customers that the cuts wouldn't affect its machines that run Win-

dows 2000 Datacenter, Microsoft Corp.'s newly released operating system that seeks to challenge Unix in corporate computer rooms. Unisys is the sole hardware vendor support-

ing Datacenter so far. During a conference call. Unisys Chairman and CEO I sweence Weigharh stressed the importance of the company's high-end ES7000 server line, which can pool as many as

32 Intel processors.

"We believe there's a big market for that product, and it's one we introd to pursue"

Informed of the Unissa news a Microsoft spokesperson said the company was committed to its partnership. "Unisys has already shown tremendous leadership and dedication to the program as the manufacturer of the ES7000, now being licensed by Compac. HP and ICL," the

### spokesperson said.

Risky Strategy? However, in a recent report on Unisys' sluggish earnings, Gigs Information Group Inc analyst David Friedlander blamed the firm's financial decline on Microsoft's slow delivery of Windows 2000. "Most of its eggs are in one

basket: Unisys has put almost vice for Individual customers

all of its engineering efforts be-hind Windows NT and Win-2000," Friedlander wrote. While its accomplishments in the Windows area have been successful, this is a potentially dangerous strategy if Windows 2000 Server does not gain market acceptance

The Blue Bell, Pa-based computer maker and professional services firm reported a third-quarter profit of \$42.9 million, down 69% from earnines of \$188.4 million in the same period last year, Revenue declined 9% to \$1.7 billion. compared with revenue of \$19 billion for the period last year. Unisys said the results were

in line with its financial out look for the quarter. But the struggling company still detailed a series of planned changes following what Weinbach described in his an nouncement as "an exhaustive

that went into effect Oct. I that

gives weight to digital signa

line in a secure location

space on the FileTrust system

and upload or download files

via the Web using a personal

identification number and a

password to gain access to doc-

uments, at a cost of up to \$10 a

on the features customers use

and their existing business re-

lationships with the bank, said

onth. Pricing will be based

technology

review of our services and technology businesses Weinbach said Unisvs trimmed 300 jobs during the past three months through a hiring

freeze, which will remain in effect for the rest of this year. The company is also offering early retirement to about 1,500 U.S. employees. Unisys had 35,800 employees worldwide last war According to the company, it plans to focus its resources

through moves such as cutting Its portfolio of industry-specifto technology offerings from 30 to 15 and reducing its investment in unspecified "low-margin commodity products." In addition, the firm said its outsourcing unit will more aggressively pursue joint ven tures and other new ways of doing business, in an effort to increase revenue growth. More restructuring steps are likely within the pext six to cight weeks Weinbach said.



tor of global Internet strategy early next year. Large firms at FleetBoston. will eventually be able to use Companies will also be able customized versions of the to set up guest access privileges to let other users like lawyers or The rollout of FileTenst is related to the new federal law

accountants view specific files that are stored in their allotted areas of the system. That could create potential security problems, according to Bell. "It's only as secure as

tures and the storage of business documents in electronic form. FleetBoston officials said the password," he said, adding that banks require traditional they expect companies to soon have large collections of legal, lockbox users to do more than tax-related and other docujust have a key - they may ments that need to be kept onneed to show photo identification, for example. Users will be able to rent But according to Robert Er-

man, general manager of the Boston office of New Yorkbased Plural Inc., which developed the product for Fleet, more security features - such as smart cards - will be added to the system in the future. though be declined to offer time frames for those features "One of the trade-offs is having mass availability." Frman

said. Customers who use the electronic lockbox to store sensitive documents for use while they travel might not have smart-card readers or retina scanners everywhere

they go, he explained. Fleet also plans to offer ser-vices like digital signatures and electronic notarization &

FleetBoston Begins Offering Virtual Safe-Deposit Boxes

Seeks new revenue storing e-documents

RIA TROM In the latest attempt at generating an online banking rev-

onue stream, FleetBoston Financial Corp. is introducing a new service for what may end up being a pretty narrow market: virtual safe-deposit boxes. Some smaller componies already provide similar ser-

vices but haven't gotten a lot of takers, said Paul Jamieson. an analyst at Gomez Advisors Inc. in Lincoln, Mass. Other virtual lockbox services include SafeDepositBox.com in Atlanta, used by Alpharetta. Ga-based NetBank Inc. and Fort Lauderdale, Fla.-based BankAtlantic Bancorp. Zions Bancorp in Salt Lake City also offers a virtual safe deposit box. Jamieson said be doesn't expect much demand for digital lockboxes, at least initially.

The potential cost of the vir-

tual lockboxes is \$120 per year.

for electronic storage these days, said Richard Bell, an analyst at Needham, Mass-based TowerGroup. Nevertheless, Jamieson said

he does expect Fleet's hanking competitors to jump into the frax, if only to be able to boost to their customers that they of for comparable services Last week, Fleet announced plans to launch a system that

will let customers to store important electronic documents in password-protected accounts. The FileTrust service is scheduled to be launched at the end of next month in a nilot project aimed at small businesses. It's expected to be followed by an extended ser-

Blaise Heltai, managing direc-

ring sometime legal films with your law

aring America' and last-related films with yo Accessing important fling while on the road - Storing digital decuments such as conti

# Toyota Web-Enables Dealers, Supply Chain

Following rivals, carmaker projects huge savings in transportation, inventory

cials declined to disclose how

much the company is investing

in the project. But one of its

tions to speed up communica-

tions between dealers and

parts suppliers and distribu-

tors. 12 software will enable

Toyota to order parts based on

The project, slated to go live

by 2002, should enable Toyota

to cut its transportation costs

by 25% and reduce the "current

day's supply of total inventory"

the time of year or region.

by 50%. Insha sold

goals is to use Internet conne

BY MARC L. SONGIA AND LAS COPSLAND

SOTOM ATOYO Sales USA is pushing the pedal to the metal to get its products and operations as Internet-enabled as possible. The automaker's efforts to

streamline its transactions with dealers and its supply chain aren't much different from earlier initiatives driven by rivals such as General Motors Corp. and Ford Motor Co., according to analysts. But Toyota is one of the first automakers to use the Web its dealerships, said Karen Peterson, an analyst at Gartner Group Inc. in Stamford, Conn. Towner is also the first company to pursue an online replacement-parts aftermarket

Last week at the Planet 2000 trade show here, sponsored by i2 Technologies Inc., Toyota CEO Yoshi Inaba outlined his company's wide-ranging Web initiatives. They stretch from providing automobiles with wireless access to live traffic and safety reports to connecting Toyota dealers in a virtually paperless communications

twork across the country. With the rapid growth in the umber of cars sold and models available internationally. success will depend on which carmakers use the Internet to capture and use information most effectively - particularly in areas such as supply-chain and customer relationship management, said Inaba.

For its part, Inaba said, Toyota is working closely with Dallas-based i2 to launch what the automaker is calling the Monarch Project, which is med at improving operations Toyota's \$1 billion parts-

vices from their vehicles.

At that time, the two companies were also considering a business plan put forth

will be Dealer Daily, a Webbased portal that will connect Toyota's 1,300 dealers with its factories around the clock, improving parts ordering, sales and vehicle repair operations.

dealers will be able to download sales and other company information directly from the Web using a virtual private network and leased lines, said Barben Cooper. C10 at Toyota Motor Sales

USA, in an interview last week

wants to have complete visibility in its supply chain, said Cooper. Suppliers will be able to look at Toyota's parts inventories and automatically replenish them, instead of waiting for Toyota to make a request. The new i2 system will also allow

two pounds of paper-based up-

dates to dealers each week,

slashing about \$3 million in an-

nual printing and distribution

In the long term, Toyota

locate the exact car model a customer has ordered whether it's in a warehouse on a truck or in a factory - and deliver it as soon as possible This is a challenge other carmakers are currently wrestling with, said analysts.

Though it's not quite th build-to-order model Delli Computer Corp. uses to sell its PCs. Toyota's approach should greatly reduce the cycle time for customers to get their cars, Cooper said. There are lots of improvements that can happen in the whole process," she said.

When a company has si nificant buying power and telatively deep ties to its suppli ers, they have the power to do it on their own without consensus from their peers," said Dan Garretson, an analyst at Forrester Research Inc. in Cambridge, Mass. Toyota has both and will use its muscle to streamline supply-chain costs.

# Delphi, Palm Launch Mobile Auto Service For Voice-Activated Dashboard System

has about five em-

ployees. Palm

In-vehicle Net services targeted for 2001

by entrepreneur Tom O'Gara Delphi Automotive Systems to launch an automotive mo-Corp. and Paim Inc. last week bile services provider inched a joint venture aimed 'In April, we knew we would at servicing the in-vehicle, molaunch a services business, be-

bile Internet services platform the two companies introduced The San Jose-based start-up, called Mobile Aria Inc., plans to provide a wireless subscrip-

tion service to car owners by mid-2001. The deal also allows the world's largest auto-parts maker to cash in on its congies faster, officials and ana-In April, Delphi inked a deal

and Delphi hold miwith Santa Clara, Calif.-based Palm to create the Communiuity stakes port Mobile Productivity Center (MPC), a voice-activated dashboard port that allows users to access their Palm de-

provider. Still, O'Gara said the cause the Palm deal only cov service will offer voice-activatered the hardware side of the ed wireless Internet access that supports applications such as e-mail and Web-based agreement," said Bob Schumacher, director of Delphi's Mobile MultiMedia Instiness Six months later, that business plan became MobileAria, which is headed by O'Gara and currently

Mich-based Delphi to cash in faster on its telematic (invehicle) communications technologies, officials and analysts said. Delphi produces the telematic , hardware used with General Motors

start-up also has venture capi tal backing from Mayfield Fund

in Menlo Park, Calif. Officials

didn't disclose the amount of

a deal with a cellular services

MobileAria has yet to strike

the first-round investment.

Corp.'s On-Star roadside concierge ser-

vice, but It has taken four years to make the optional equipment 32 of 54 GM vehicle lines In contrast, it took just eight months to get the MPC unit to

market, said Schumacher. MPC will be available through retail channels in December. The relatively short cycle time for consumer electronics works in Delphi's favor but against the car companies, because it takes five to seven years before they can think about retooling a vehicle," said Jim Hall, an analyst at Auto-Pacific Inc. in Tustin, Calif GM will begin a nationwide rollout of a premium OnStar voice-activated e-mail and Web service called Virtual Advisor next month. But the new service will be available only in

2001 mode Dawn McGreevey, an analysi at Gomez Advisors Inc. in Lincoin, Mass., said consumers have had a long wait - nearly three years - to get interactive Web services from OnStar Still she said, she expects bealthy demand for the service from drivers who would like to be more productive during

Pricing for the MPC unit hasn't been determined, but of-ficials said it will cost less than a Palm VII, which starts as \$399. The 32-bit processor on the MPC allows users to cache and download data from the Palm devices.

### NEWS

# TV 'Squatters' Jeopardize Time Line for Wireless

FCC chief says slow adoption of digital television could delay release of spectrum

TIDERAL Communications Commission (FCC) Chairman William Kennard lase week called television broadcasters "spectrum squatters" that hoard "the most valuable resource of the Information Age." He urged Congress to start charging the sta-tions fees to force them to give

up one of the two channels each one now occupies Kennard, in a speech at the Museum of Television and Radio in New York, said Congress allocated a second channel to roadcasters at no cost to allow them to broadcast divital TV (DTV) signals while continuing to air programs on their original frequencies.

ate on both channels until 2006

or until over-the-air DTV serves 85% of the U.S. market. "Given the way that broadcasters are dragging their feet at the moment, we may not see that level of DTV penetration until 2025," Kennard said.

Edward Fritts, chairman of the Washington-based National Association of Broadcasters. said in a terse statement, "Despite the best efforts of broadcasters, digital television's potential remains in part unfulfilled because of PCC inaction on several critical issues.

The broadcasters association said 135 stations currently broadcast DTV. 'It is regrettable that Chairman Kennard has failed the test of leadership. Sadly, he is trying to shift the blame for a faltering DTV transition," Friets said.

receive DTV channels, establish DTV/cable interoperabili ty rules and require cable systems to carry DTV stations. but the FCC has taken none of

The FCC intends to suction the portion of the airwaves currently used by broadcasters to air digital signals - Channels 60 to 69 - next spring for

advanced, high-bandwidth mobile telephone and data services. But companies that win that multibillion-dollar lottery can't use the spectrum until the stations shift their digital service back to their original frequencies in the Channels 2 through 13 hand. The new mobile licensees may have to not the broadcasters to speed up

Kennard said Congress could speed up the process by imposing a 'spectrum-squatters fee" on broadcasters, start-

ing in 2006. The fee would in-

AT A QUANCE FCC Chair vs. Broadcasters Calls TV states owners "spectrum

· State for worth, by one the specimen loss Information Age applications

· Asias Congress to more less on bened casters starting in 2006

· Says all televisions should be digitalmedy by 2003 clude a built-in yearly escalation clause to speed up the

process of freeing additional spectrum needed for the development of broadband mobile networks that can support the wireless Web

Tom Wheeler, president and CEO of the Cellular Telecommunications Industry Association in Washington, said Kennard's remarks illustrate the problem the U.S. wireless in-

zens and entrepreneurs are on the short end of the spectrum stick," Wheeler said in a statement, pointing out that Japan has allocated 300 MHz for wireless, the U.K. 364 MHz and France 395 MHz, while "in the U.S., we are stuck at 189 MHz." Lawrence Grossman, former ecsident of both NBC's News Division and PBS, said he agreed with Kennard's statements about the broadcasters but be added that he would like to see a fee imposed immedi

Jeff Chester, a public-policy advocate at the Center for Media Education in Washington, said the chances of Congress imposing fees on the broadcasters are "slim," not only because of the high level of campaign contributions by broadcasters but also because of "invisible contributions"

such as news coverage of campaigns, "No member of Congress will ever criticize broad casters in an election year." Chester said. The chances of getting Ken-

nard's proposal through Con-gress are poor, Grossman said. But Congress is becoming about spectrum, which has become increasingby valuable," he said.

# According to Fritts, Con-**CERT Narrows Window for Security Holes**

Advisory service will report all flaws within 45 days

Users who support public disthe center and can be proven closure of security vulnerabilities got an unexpected boost Carnegie Mellon Univers

ty's CERT Coordination Center security advisory service last week instituted a new policy under which it plans to pub-licly disclose all software flans and vulnerabilities 45 days after they're first reported to the

The policy builds on Pittsburgh-based CERT's usual practice of issuing perio curity advisories to its clients. Until now, such advisories have been restricted only to vulnerabilities that the center

and in need of immediate attention by users. But as part of the new policy, CERT will start issuing what are expected to be far more frequent "vulnerability reports" on all security problems that are reported to

Shawn Hernan. The new policy is a good thing for users, said Josh Turiel, a network manager at Holyoke Mutual Insurance Co. in Salem, Mass. "I'm a big believer in full disclosure for security problems]." Turiel said

NUMBER OF ICSA Net 675

Forty-five days is a very reasonable time for a vendor to fix a flaw....[If] it is not done by Under the new policy, CERT will poss on all relevant infor-

mation about a specific security problem to the vendor. But after 45 days - or earlier, if warranted - the information will be released to the public. regardless of whether or not the problem has been fixed.

Hernan said. The policy is really an attempt to balance the needs of

### the vendors with those of the general public," he added. leasing late Operationed CERT's plan to start making

more frequent disclosures of at a time when some security experts are questioning the wisdom of publicly releasing such information.

In a keynote speech at July'a Black Hat Briefings security conference in Las Vegas, for example, security researcher Marcus Ramm charged that

the full-disclosure approach isn't improving computer security, Instead, Ranum said, it's only encouraging more attacks by providing would-be hackers with information on how to exploit vulnerabilities to break

It's a contention that's chal lenged by security professi als such as Ryan Russell on MIS manager at Security-Focus.com, an online bulletin board and security portal in San Mateo, Calif. Last year, the SecurityFocus site posted 575

"I'm firmly in the full-disclosure camp," Russell said. Giving users as much detailed information about vulnerabilities as quickly as possible helps companies take appropriate action to mitigate risks and protect themselves from attacks, he added.

"I would rather run the risk of having someone exploit a vulnerability I know about than have them exploit something I don't know about." agreed Turiel.

# **Any Data Warehouse Is Only AS Good As The** ains Beh

With the demand for warehousing skyrocketing. you're juggling immediate eBusiness needs while creating an environment that can scale for future growth. DecisionBase" is a complete software suite that gives you CA's smartest technologies for designing, deploying. managing, and leveraging your warehouse and other eBusiness applications. Its foundation is the industryleading PLATINUM" Repository.

ensuring a central, shared source of metadata for rapid deployment and better management of your warehouse and eBusiness



What's more, DecisionBase exploits CA's patented, selflearning Neugents" to mine complex data patterns, predict business problems, and suggest courses of action. Now, you can

capitalize on opportunities before they happen - a hupe competitive advantage

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### NEWS

# Online Retail Sales Could Double This Holiday Season

Experts predicted last week that fourthquarter online retail sales will double compared with last year

Inc., an electronic-commerce benchmarking firm in Lincoln. Mass., estimates that online retail sales during the

more than double the \$5.2 billion in sales reported by the U.S. Department of Commerce during the same period last year. This year's growth will be driven by an increase in the number of people who view the Internet as a valuable shopping tool, according to Gomez. It will also be fueled by companies' efforts to improve service - particularly order fulfillment - for existing online

customers, the study found.

Bob Smith, executive director of Shop.org a trade group of online retailers, said be doesn't think Gomez's prediction is unreasonable, and he downplayed the impact higher fuel prices could have on consumer spending in the months ahead. However, fulfillment is a "top-of-mind" issue for all online retailers, said Smith. "Companies are very aware of what they need to do and that delivery on time is not only critical for satisfying the consumer, but getting the consumer to come back," he said. Most companies this year have increased their investment in inventory planning, inventory management and merchandising, Gomez said. In fact,

80% plan to have real-time inventory management during the upcoming hol iday season, according to the study Last year, many big electronic retail ers got hammered when they entered the holiday buying season unprepared to handle the huge spike in online or ders. As a result, the Federal Trade Commission fined seven major retailers, including Toysrus.com Inc., CDnow Inc. and KBkids.com LLC. \$1.5 mil-

"BOUNCE NUMEZ AT

ant sales (Q4):

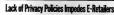
tomer service and order fulfill Redesigning Web sites

Using more robust search engines

rorming teaming arrang with vendors that have st listed distribution

lion each for not delivering orders on time. "Companies have a better feeling and more responsibility for cetting products to the customers at the right time this year," said Barrett Ladd, an an alvst at Gomez, "Many of the ton tow firms have brought their fulfillment operations in-house, whereas last year they outsourced them," said Ladd.

The forecast by Gomez follows : similar study released last month by Boston-based research firm The Yankee Group, which predicted that online holiday sales would reach \$9 billion this year. Yankee Group officials couldn't be reached for comment, but Ladd said the difference between the forecasts in likely due to differences in the types of companies and services included.



policies could be the biggest imp

bridge, Mass-based Forms Inc. and Verdence Corp. a Sen M Calif.-based company that specializes in evaluating Web sites, found that the mon satisfied online buyers are with a Web site's onacy policy, the more com will be when they shop at that site

The Forester study, "Web Bu The homestin study, "Web Buyers Speak Out About Privacy Policies," sur-veyed 400 Web buyers and analysed their attractes toward online privacy on regist major retal sites. The study evaluated the privacy policies of Amazon.com. Battle-com, eToys.com, Fisher-Price.com, JCPien

policies from zero to 100, based on the esse of locating the policy, their overall set efaction with the policy and their comfort level in shopping at the site after reading the policy. At least five of the sites consive diocre" scores of between 60 and 76 ed the lowest re, a 39, used a text link that blo unto the sale's hardenessed and made the

nes of the Web sites that earned the mediacre or poor scores, the firm did an nce that two of the right sites, KBlo rest in all arees evaluated.

an online privacy watchdog group in Wash-ington, called online privacy the "No. 1 conhave to do more to convence consumers

# Business World

# ALL E-BUSINESS. ALL THE TIME.

e-Businessworld.com, Updated hourly. it makes everything else history.



businessworld.com





our e-business solutions as well You see, Autobytel.com-the global

leader in automotive e-commerce and services—was looking for help in maintaining its lead and accelerating its growth.

Not surprisingly, the people who came up with the idea of selling cars via the Internet came to another group of e-business innovators, the

people at Unisys We're helping Autobytel com with everything from Unisys e-Sction Enterprise Servers to building Web sites to handle their global expansion. And we'll be there to see the job through. But, then, with Unisys that's always the deal, www.unisys.com



# Turbol inux Gets \$30

# illion Investment

ook announced it has received 30 million in a third round of funding. This is the Brisbane, Calif.on. The new investment is being to by Fujitsu Ltd., Hitachi Ltd., Silicon Graphics Inc., Softbank res Corp. and other cor

### asdan Adds IT Execs

nding of some information ing and the rollout of a new

endag announced that it hired on Randich as assective vice dant and chief technology off-nd appointed Anna Every to be

### FCC Halts Review of America Online Deal

the Federal Trade Com ns its own review. The FCC said it's "stopping the clock" on ceresid-

### HP Puts Focus on **Developing Markets**

in an effort in narrow the "digital divide," Hewlett-Packard Co. said it will begin an initiative in provide technology and build markets in de-

# Exchange 2000 Users Laud New Capabilities

But say they're leery of installing the apps

MICHALIAS VECAS style display of laser lights and pyrotechnics, Microsoft Corp. officials worked hard to get current and prospective customers pumped up for the company's new line of messaging and collaborative software at the Microsoft Exchange and Collaboration 2000 conference

here last week. Users attending the conference said they were excited about the possibilities Exchange 2000 promises but said they were wary of the complex task of implementation. Some of those users - joint development partners who have begun the process - took part in a panel discussion and said the benefits are worth the effort. Exchange 2000 has the po-

tential to boost electronic business initiatives by serving as a development platform for corporate Web sites, said Vicki Fredrick, U.S.-based director of the Exchange migration at Aventis, a pharmaceutical con-

warn maker, analysts said. This flexibility signals that Mi-

well as by application service providers (ASP), analysis said

ing released to the public this

week, setting the stage for the or pected misage in the first hall of

next year of the next Office prod-

edge-management tool Tahos. All are based on the new Web Stor-

uct and the much-hyped knowl

The Exchange 2000 line is be-

this responding to market

glomerate based in Strasbourg,

Avenus began to implement a beta of Exchange 2000 earlier this year as a Microsoft joint development partner. Fredrick said that once installed, Exchange 2000 will streamline administration by speeding anoffication distribution and may sage processing. But the effort. still incomplete, involves a lot of work she said. "You guys have got a learning curve ahead of you," Fredrick told a group of prospective developers at the conference

### **Complex Process** A Microsoft spokesman ac-

noted that the company de-2000 from June in part to exprocess more manageable. "I'm looking forward to the Exchange administrator at Emery Worldwide in Portland.

of Microsoft's Active Directory, so companies without Ac-

knowledged that installation will be a complex process but layed the launch of Exchange pand efforts to make the upgrade, but I'm also anxious about it," said Sean Smith, the Ore. Because Exchange 2000 is made up of more discrete com-

### **Exchange Moves Toward the Middle**

en Microsoft unwelled change 2000 last week. The ward a Web-browser interface ny demonstrated cross and will allow upons and develop platform capabilities not previous hr seen in products from the softers to create and send documents

The replication abilities of WSS make Exchange more competit with Lotus Development Corp.'s Notes, said Date Gardner, reforces and opening its messaging and collaboration platform for use with third-party applications, as search director at Aberdeen

Group Inc. in Borton Notes. meanwhile, is getting faster at replicating, he said, which shows that Lotus is watching Microsoft. trust ruling by U.S. Destrict Court Judge Thomas Pentield Jackson. spawned the new fleebility. Sardner said. And ASPs will increas-ingly be able to demand flexibility

- Jernity (ASabetos

Smith said he will be able to "pass off more of the little stuff" to administrators at Emery's offices, instead of requiring them to download

buge attachments. While he and other adminis trators may not be 100% ready to start moving to Exchange 2000, Smith said, "How clue are you going to learn?" The panelists offered som uggestions to prospective users. For starters, they said. users need to recognize that Exchange 2000 is built on top

tive Directory will need to upgrade to that first. "Know your existing environment," added Tom Mc-Cormick, the Exchange administrator at Marathon Oil Co. in Houston, another Microsoft joint development partner. Administrators will have unpleasant surprises if they don't know what they are migrating

AT A QUANCE Installing Exchange

Users who have begun in stalling Exchange 2000 offer the following tips: · Install Active Directory if your company doesn't almody have at

· Know your parent re-months of ■ Clean up detabases as much as some before moving data to Eachenge 2000. ■ Expect it to be a loarning experience

to in the new system, he said Companies that are considering hardware upgrades may find the installation of Exchange 2000 a good impetus punelists and other users agreed. But Dan Guttman, Exchange administrator at The MTVi Group Inc., the online arm of New York-based MTV Networks, said he didn't have to upgrade his server to implement the new working \$

# Microsoft Announces New Operations-Management App

Microsoft Corp. last week detailed plans to release new operations-management technol ony based on software licensed from NetlQ Corp. in Santa Ches Calif

The product is for use with Windows 2000 and comp ion products such as the SQL Server database and Exchange Server a mail contem Microsoft said the software

is scheduled to be released next summer. Included will be a product called Microsoft Operations Manager and a series of operations-management interfaces supporting technologies such as XML Microsoft said it's licensing

NetIQ's software, also called Operations Manager, and will do additional development work before making it avail-

As part of the three-year deal, Microsoft will pay \$175 million in licensing fees and as much as \$6 million in joint-development funding, according to NetIQ In addition, the agreement requires Microsoft to invest \$5 million per year in

NetlQ and to pay the company another \$5 million annually to cover marketing expenses Meanwhile, NetlQ said it will develop a range of management products based on Microsoft Operations Manager for use on non-Microsoft platforms and applications beyond the Windows environ-

Pricing for Microsoft Operations Manager won't be dis-closed until the software is ready for shipment, according to Microsoft.

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www.visuainetworks.com/cw 1-800-240-4010

# IBM Bolsters Unix Server Line

Wave of high-powered systems hitting market

BY JAPKUMAR VIJAYAN on other was a well bearing us high-end Univ server

family with a new year trm that features tasket chips, larger memors support and better systems management carabilities, the

The 24-processor posts serv or will ship in the middle of nest month and features technologies migrated from IBM's maintraines, said Scott Firth, an IBM

The server adds to a growing menu which users will be able to choose due ing the next several

fen neeks. Univ ri-IBM'S 24-PROCESSOR Adv Sun Microscop680 Unix server will truto Inc. and Hesship post month lett Packard Cycling meed major upgrades to their high-end portiolies, Sun announced its tirst filtra SPARC-III servers, and HP an-

other substantially better per D.H. Brown Soon rates Inc. All the servery my much more walable than previous

into multiple smaller servers administrators multiple applica Smilerly, all the

products support technologies that allow mers to quests add complete or remove and repenents unfout

brougue the en "B's a new procession of servers that are clearly rush ter." Parandar sad

. User out MHz they had ■ V. overterm like vaguary

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si Stem performano

· Support for up to SGcB or We'll probably upgrade to the [18M] servers" when they

ter mentioning and managing

mation systems at Blue Lipps Blue Shield of Tennessee in Hale's company currently uses a 12-processor 580 server to IBM's new system. The line as a whole has performed well for us. Hale said. "It is reliable and offers very high

Center Courting ·Microsoft has opened tech nology-centers in Waltham Mass

performance"

and Austri, Texas More centers are planned in Toronto (this month), Mountain View Calif (next month) and Chicago (next April ). · Service afferings include

performance tuning and scalability analysis, platform upgrades, secutify assertment and advanced by offering customers access to a broader range of resources

and experts. The Austin comes

now has five full-time consultams whose focus areas include Windows 2000, 5Q1 Server 2000. Commerce Server 2000), Bir falk Server 2000 and other Net enterprise servers. Neil Iscue, CFO of Austin based eCertain, and his company spent about \$20,000 for a week of access to the work space, hardware, software and teng of hands on Microsoft consultants. That investment belped his company, which provides secure transaction services, determine that its Windows 2000 Advanced Server architecture will waltions per month to the antici-

rated 4 million transactions

per month it exports to princes

two years from now, he said. Iscue noted that etertain new mass on nine Dell bases but it rested with almost 30 machines. You can never do it courself [in-house] for that amount of money. And if you think of the machines, people and time, the cost can be orders of magnitude greater if you go off in the wrong direction, particularly in the scalability anya. Isone said. "If you have an architecture that doesn't scale then really, no amount of hardware will be able to fix the

problem. So you need to find

these things out early "

### Microsoft Opens Second Hands-on Technology Center which Compaq Computer

Labs help users test e-commerce apps

BY CAROL SLIMA

Macrosoft Corp Lot work an nonwol the opening of a applications in a laborators powered than their internal

its, which features Dell Compater tiorp hardware, marks the second of five elemed Mo. Und Microsoft opened a Highlights of HAT's new protect center in Walther May, but

turn has provided the server infrateurine: Additional conters are planned for Toronto. Chicago and Silicon Valley, Bub Laskey, the managing consultant mersocing the Austin facility. Said his group carpets engagements of two to eight weeks to help customers through the hardest challenges of a development proj

cct" and assess them in deploy ing Microsoft's new line of Net enterprise servers. Price me is a weekly flat fee that in clindes software bardware not work infrastructure and a team of Macrosoft architects

Laskey said the technology centers differ from prove Mi cheeft lab-type environments

# Compuware Warns of Weak Q2 Earnings

Mammane somare vendor have purth resulted from users delaying signing software spreaments in mittagraph of new license options being of fered for IBM's latest mainframe release analysis and

Farmington Hills, Mich. hased Companiers had need warned that its quarter ended Sept 41 would be weaker than in license fees from its orain francisoltware flux marks the third straight quarter in which Compaware has failed to meet the consensus earnings exper fations of Wall Street analysis Compaware said carnings

are expected to come in at \$425 million to SIX" million, off the same againer last year. In tenty from sign million to Spir million less than halt the 5212 million recorded in List

### Burring on Hold Part of the Schillage compa-

m's problems this quarter min have resulted from users want me for the new usage based pricing models being offered mount of the Assumation frame, and Hand Honer, an atalyst at consultance III on trix lity in Framingham, Mass The new 1834 systems not

only provide nearly twice as much performance as presions mainfrances but also support a

me model called Workload Li censed lurges, which promise to make softmare hornes less expensive and more manager Viol of people are point to be extremely reluctant [about]

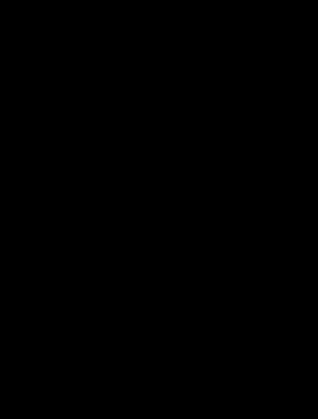
### Revenue Shortfa the quarter ended Sept. 30:

Between \$474M and \$487M Software license fee revenue Between \$100M and \$105M

sistenance revenue Between \$110M and \$115M Between \$264M and \$267M petting into long-term software beense deals without first taking a look at the new option." Flower said. "There's conte to be a lot of transcore mem of pricing models." A part of it has to do with

IBM's new pricing model," served Judish Hurwitz, presi-Sem of Hurwitz tonum Inc. in Frantingham, Mass. There are, honour, a number of other factors that may also be comtributing to a high-end soft ware slendown, she said Many users, for instance, angrapeling over whether to sien up for multityor license agreements, as they have in the post.

or for Internet-based application hosting services, she said "We are at a very complex time." Hurwitz said, "I think a bet of users are taking a step back and are trying to under stand the value they can per out of different kinds of approuches"



mation systems at Blue Cross-Blue Shield of Tennessee in

Hale's company currently

- the immediate predecessor

# IBM Bolsters Unix Server Line

Wave of high-powered systems hitting market

THE WEEK WILL boost its high-end Unix server family with a new system that features faster chips, larger memory support and better systems management capabilities, the

company said The 24-process er will ship in the middle of next month and features technologies migrated from IBM's mainframes sald

Scott Firth, an IBM The server adds to a growing menn of next-generation Unix servers from which users will be able tu choose during the next several months

few weeks, Unix ri- BMTS 24-PROCESSOR vals Sun Microsystems Inc. and Hewlett-Packard Co. have nced major upgrades to their bigh-end portfolios. Sun aced its first Ultra-SPARC-III servers, and HP announced a 64-processor enter-

All of these systems reporsent a new generation of enterprise Unix servers and should offer substantially better performance and reliability than existing technologies, according to Rich Partridge, an analyst at Port Chester, N.Y.-based

D. H. Brown Associates Inc. All the servers are much more scalable than previous ones and can be partitioned into multiple smaller server making it easier for

administrators to consolidate multiple applications on a single large server. Similarly, all the products sup-

port technologies that allow users to quickly add capacity or remove and replace faulty components without beinging the en-

tire server down. "It's a new generation of servers that are clearly pushing higher into the data centet," Partridge said.

prise server it calls Superdome. Highlights of IBM's new p680 ■ Faster, 600-MHz chips featuring IBM's Silicon-on-Insusystem performance lator technology.

· A mainframelike capacityunersdayon-demand feature that allows users to quickly activate additional processors.

for monitoring and managing uses a 12-processor S80 server Support for up to 94GB of

"We'll probably upgrade to the [IBM] servers" when they

Chartanooga. to IBM's new system. "The line as a whole has performed well for us." Hale said. "It is reliable and offers very high

become available, said Hugh performance."

# Microsoft Opens Second Hands-on Technology Center

Labs help users test e-commerce apps

Microsoft Corp. last week announced the opening of a technology center in Austin. Texas, where users can design, develop and test e-comm applications in a laboratory setting that may be more highpowered than their internal

The 12,000-square-foot facility, which features Dell Computer Corp. hardware, marks the second of five planned Microsoft Technology Centers. In March, Microsoft opened a

which Compaq Computer Corp. has provided the server infrastructure. Additional centers are planned for Toronto, Chicago and Silicon Valley.

Bob Laskey, the managir consultant overseeing the Austin facility, said his group targets engagements of two to eight weeks to help customers through the hardest challenges of a development proj ect" and assist them in deploy

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centers differ from prior Micenter in Waltham, Mass., for | crosoft lab-type environments

based eCertain, said his compamy spent about \$20,000 for a

from handling 10,000 transac pated 4 million transactions per month it expects to process

Iscoe noted that eCertain now runs on nine Dell boxes but it tested with almost 30 machines. "You can never do it yourself [in-house] for that amount of money. And if you think of the machines, people and time, the cost can be orders of magnitude greater if you so off in the wrong direction, particularly in the scalability area. Iscoe said. "If you have an architecture that doesn't scale. then really, no amount of hard ware will be able to fix the

# Compuware Warns of Weak 02 Earnings

Mainframe software vendor

Compuware Corp.'s warning of a weak second quarter may have partly resulted from users delaying signing software agreements in anticipation of new license options being ofred for IBM's latest mainframe release, analyses said.

Farmington Hills, Mich. based Compuware last week warned that its quarter ended Sept 30 would be weaker than expected because of a shortfall in license fees from its mainframe software. This marks the third straight quarter in which Compuware has failed to meet the consensus earnings expectations of Wall Street analysts.

Compuware said earni are expected to come in at \$474 million to \$487 million, off

the same quarter last year. License-fee revenue is likely to range from \$100 million to \$105-million, less than half the \$212 million recorded in last year's second quarter the company added.

### **Buying on Hold** Part of the \$2 billion compa

my's problems this quarter may have resulted from users waiting for the new usage-based pricing models being offered in connection with IBM's justannounced 64-bit 2900 main frame, said David Flover, an analyst at consultancy ITCentrix Inc. in Framingham, Mass. The new IBM systems not

only provide nearly twice as much performance as previous mainframes but also support a

ing model called Workload License Charges, which promi to make software licenses less expensive and more manageable during the next few years. "A lot of people are going to

be extremely reluctant [about]

getting into long-term software license deals without first taking a look at the new option," Floyer said. "There's going to be a lot of reassessment of pricine models "A part of it has to do with

IBM's new pricing model," agreed Judith Hurwitz, president of Hurwitz Group Inc. in Framingham, Mass. There are, however, a number of other factors that may also be contributing to a high-end software slowdown, she said. Many users, for instance, are grappling over whether to sign up for multiyear license agreements, as they have in the past, or for Internet-based application hosting services, she said.

We are at a very complex ime." Hurwitz said. "I think a lot of users are taking a step back and are trying to understand the value they can get out of different kinds of approaches." D

ain View, Calif., (r

by offering customers access to a broader range of resources and experts. The Austin center now has five full-time consultants whose focus areas in clude Windows 2000, SQI Server 2000, Commerce Server 2000, BizTalk Server 2000 and other .Net enterprise servers Neil Iscor, CEO of Austin

week of access to the much. space, hardware, software and team of hands-on Microsoft consultants. That investment helped his company, which provides secure transaction services, determine that its Windows 2000 Advanced Server architecture will scale tions per month to the anticitwo years from now he said.

problem. So you need to find hese things out early."



ess-unit executives who

are encouraged to generate

# NEWS

# Intel Waiting on

### Pentium III Relaunch intel Corp. won't releasech the 1.13 Mz version of its Pentium III

ent because of a technical ch, until the second quarter of et year, an lotel spokesman said at week. That doesn't mean use have to wait six months, how over, letel has said it expects to unch its new Pentium IV proces or, expected to debut at 1.4 GHz. fore the end of the year.

### HP Still Eveing Pricewaterhouse Unit

t-Packard Co. is still in talks ing division, HP CEO Carly confirmed last week. "This ential acquisition is based on a of that the days of talking to one

### H-1B Visa Application Fees to Double

The White House is expected to a bill doubling the H-18 visa again m fee from \$500 to \$1,000. he loe is charged to employers ap lying for workers under the pro-ram. The money will be used to U.S. workers, Congress a

### Private Firms Getting Federal Competition

ing offs private enterprise, ing util private enterprise, ing to a study by several econo-mints, including Joseph Stiglitz, a "mor chairman of the U.S. Coop-mer, One initials" od in the report was the U.S Service's electronic billing or services. The report, the Computer & Co

### Continued from page I Chemicals

related, complex, fairly frag mented industry, all of which makes it quite ripe for some form of e-commerce," said Leif Eriksen, an analyst at Bostonbased AMR Research Corp. to AMR's April ranking of the top 20 Internet exchanges

six served chemical companies. That's partly because chemical companies regularly buy their raw materials from other chemical companies, so there's extra incentive within

the industry to cut costs by doing business electronically "Most chemical companies are buyers and suppliers to each other. Reliance like this spawns a collaborative mentality" said Glenn MacKennie director of chemical industry solutions at WebMethods, aSan Francisco-based maker of software to link back-end systems

### and front-end Web sites.

Compared with other manufacturing industries, the chemical industry also has a tradition of using IT to cut costs and drive innovation. like automating at the manufacturing plant level Erikeen said In addition to its Web size

Eastman has two new Internet ventures - Paintandepatingscom, an online exchange already up and running for the huying and selling of specialry additives, and ShipChem.com. a Web-based logistics services company for the chemical industry that's set to go live this month. Three more electronic-

business spin-offs are due to launch by year's end. "Our strategy is to get new

revenues through new valueadded services. Information technology is the value delivery system," said fred Buehler. director of electronic business at the \$4.6 hillion, Kingsport, Tenn-based specialty chemicals manufacturer.

FMC Corp., a 54.4 hillion Philadelphia-based chemical company, is enabling one of its largest customers, PQ Corp., to place "machine-to-machine" orders for soda ash (an ingredient that goes into other chemicals that PO makes) and other repeat buys directly into its SAP AG R/3 enterprise sys-

tem via the Internet.

By the end of December, FMC will integrate IS more customers into the sutomated our tem, which took less than four mouths to develop and test

The big advantage is that employees at both the buyer and seller companies now need to pay attention only to those special orders or ones with which there are problems. CIO Edward Flynn told attendees at a chemical industry electronic business conference here last week. Previously, employees manually handled all orders sent via fax or placed

over the phone. At Wilmington, Del-hased Du Pont Co. electronic business has involved adopting not one but several business models said CIO Robert Ridout

For example, the company sells its commodity products on various digital exchanges but sells its wide array of hranded materials, such as Tyvek house insulation wran and Lycra fabric, via 40 sepa rate bronded Wish sites To jump the online business

### Continued from page 1

efforts. Conaway last week was here at the Planet 2000 trade

polories Inc. In the next two years, Kmart aims to beef up its supplychain and Web storefront operations, standardize and automate its ordering and fulfillment processes and

they're supposed to. said Conaway Kmart will also be better able to forecast customer de-

and improve its transportation opera tions Both Trox, Mich. based Kmart and

that they are working with Dallas-based i2 to revamp their entire IT platforms to join the electronic-business world.

The applications developed for these companies will eventually he sold to other companies withio their industries, acconfine to 12

companies are buyers and suppliers to each other. Reliance

like this spawns a collaborative mentality.

ULENN WACKERZIE. DIRECTOR OF CHEMICAL INQUSTRY SOLUTIONS, WEBMETHOUS

initiatives. Du Pont seeded each of its business units with an electronic-business leader and an electronic-technology leader and very small but for cused electronic business teams. The company also has put on more than 50 workshops for

The partnership is just what Kmart needs, said Conzway.

The company lacks integrated

supply-chain processes, he

said, and as a result, customers

wind up going to stores look-ing for advertised goods that

line marketplace to

connect its network

of suppliers and

ker of farming and

ment, which had rev-

erue of \$19.7 billion

fast year, hopes to

squeeze out \$100

million to costs dur-

ing the first year the

The 75-year-old ma-

astruction equip-

aren't avsilable

abled, he said.



new ideas for selling their products over the Internet. "It's all about idea generation," said Ridout, "We showed

them sites like (online auction eer) eBay and [online grocery servicel Streamline.com and would ask them to apply the ideas to their own businesses." On the whole, when it comes to electronic business initia tives, most chemical compa-

nies are "still spending far, far more than they're benefiting, said Robert Koort, a chemical industry analyst at Deutsche Bank AG in New York. But that will change in the coming year, he predicted.

"Those who are going ahead first [with electronic-busipess projects are going to be better entrenched with their customer base to the exclusion of those that don't act now. To the extent that IT enables them to make connections, we'll see a differentiation between best-of-class and worst of-class," Koort said.

facturer's corporate information services department. With a multitude of product options, Smith said, custom could order thousands of different configurations.

Some pieces are in place. Earlier this year, Caternillar Moreover, the supply chain implemented i2's TradeMatrix is "virtually zero" Web-endigital marketplace software in its Performance Province Province Peoria, Ill-based Caterpillar ucts Division, which led to a plans to let customers order and configure heavy machin-\$32 million reduction in product inventory and a 38% cut in ery and other prodassembly-line processing times. ucts via the Web and However, Caterpillar's plans create a private on-

may not go down well with all of its approximately 5,000 suppliers, said Joshus Greenber a principal at Enterprise Appli cations Consulting in Berkeley, Calif

Interfacing with existing public and private online marketplaces is already putting stress on their IT resources. Greenbaum noted, Caterpillar may meet resistance unless it does something to "take away the technological burden" for

Michael Bittner, a research director at AMR Research Inc. in Boston, said that although these are both significant projects that could benefit the two companies, they could also re-sult in long-term, complex im-

plementations.

its suppliers, he said.

show, sponsored by i2 Tech-

make sure products get to stores when

mand for its goods

Caterpillar Inc. an-

on goes live. The ordering process on Caterpillar's legacy systems requires too much human intervention and takes too long to offer a build-to-order model for most of the company's customers, according to Bill

th. a manager in the manu-



October 24, 2000 Windows on the World New York City

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# E-Business Strategies Building the Versatile Enterprise

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# **Energy Companies** Form Software Venture

Houston-based OpenSpirit should create new standards for energy industry

HEVRON CORP. and Royal Dutch/ Shell Group have teamed up with a software unit of Schlumberger Ltd. to establish a jointly owned venture that will market a vendor-neutral application-integration framework for petroleum exploration and production activities. The new venture, Houston-

based OpenSpiris Corp., plans to continue developing collab-

oration and information-sharing technology that was created by a wider group of energy companies and software vendors. That group was known as the OpenSpirit Alliance. San Francisco-based Chevron, The Hague-based Shell and New York-based Schlumberger said a commercial release of the OpenSparit tech-

to development, production

Net will be responsible for

overseeing its business-to-

business, business-to-custo-

mer and business-to-employee

Included in the initiative is

the company's ownership

stake in Covisint, an online ex-

change created jointly by DaimlerChrysler, Ford and

GM, DCX Net will also manage existing investments, which to-

tal \$290 million, in e-commerce

companies such as Pomerway

Cobalt Group Inc. in Seattle

DaimlerChrysler said DCX

shipment this quarter. The companies will own coual shares of the venture.

with Schlumberger holding its stake through its GeoQuest business unit Houston-based GeoOuest markets software and data-management services to petroleum companies. The OpenSpirit framework

was previously marketed by PrismTech Ltd., which has Itcensed the technology to the new OpenSpirit venture PrismTech developed the middleware, but the oil companies wanted technical ownership

areas ranging from purchasing quisitions at DaimlerChrysler, and Olaf Koch, the company's vice president of corporate DCX Net will have offices in New York, Detroit, Tokyo,

Stuttgart and Palo Alto, Calif. It will provive support and sech.

nical advice from the Daimler-Chrysler research lab operation, the company said.

DaimlerChrysler was slower to detail its e-commerce plans than Ford and GM, but it began announcing a series of Internet-related projects this sum-

framework, so they bought it

vendor, said Steve Jennis.

The OpenSpirit technology

is based on standards such as

Needham, Mass-based Object

Management Group Inc.'s

Common Object Request Bro-

ker Architecture, and it sun-

ports cross-platform develop-

ment and deployment of soft-

ware on Unix and Windows

NT systems

from the U.K.-based software

PrismTech's CEO. Terms of the

deal worse? disclosed

Cross-Platform Development

Randall Nottingham, an analyst at The Yankee Group in Boston, said OpenSpirit will improve efficiency for energy companies. "Communications [between

petroleum communical are notoriously complicated and difficult" because the companies have proprietary electronic document systems for each business relationship. Nottinghom said

The software would enable companies to communicate through a central network, exchanging information and

But OpenSpirit is competine with other groups, such as the Oil Field Services Portal in Houston, to adopt standards

for energy companies. "They can't all be successful. but some parts [from each group) will be adopted," said lottingham. mer. Included are an upgrade to its Web sites aimed at U.S.

suto buyers and an internal Web-based technology infra-

structure that's intended to

link all aspects of its vehicle

design, production and mar-

Nobel Physics Prize Awarded to IT Pioneers

Kilby invented integrated circuit

Inc. in Indianapolis and The BY JOY PARK The subsidiary "will forge lack Kilby, an inventor at Texas. alliances, enter into joint ven-Instruments Inc. who develtures and invest to promote oped the first integrated cir-(our) e-business activities." cuit in 1958, last week was said Eckhard Cordes, the jointly awarded this year's No-DaimlerChrysler management bel Prize in physics along with board member responsible for two other scientists who also corporate development and information technology. In addithe foundations of modern information technology tion, DCX Net will

Sharing the award with Kil-Chrysler's interest by are Herbert Kroemer, a in Venturepark Inphysics professor at the Heicubator AG, a versity of California at Santa Berlin-based ven-Barbara, and Zhores L Alferon ture-capital firm who is the director of the A. F. that invests in Ioffe Physico-Technical Instie-commerce comtute in St. Petersburg, Russia.

Kilby was given half the \$985,300 prize by the Royal Swedish Academy of Sciences in Stockholm. Kroemer and vice president of Alferow will share the other because of his death in 1990, data storage systems, in mergers and ac- half for their separate individent the academy lauded him as phones and CD players.

op the semiconductor technology used in transistors. In an explanation

of the physics award, the Royal Swedish Academy noted that Kilby, 77, and the late Robert Novce of Intel Corp. are both considered the inventors of the

modern integrated circuit. Kilby created the first device. while Novce developed a chin as it would later be manufactured, using materials such as silicon and silicon dioxide, the

Bowever, Kilby "was first with his patent application, and Novce knew of this work when he filed his own application" related to the technology. the Swedish academy added. Although Novce wasn't eligible to share in the Nobel award portant founders of Silicon Valley." Kroemer, 72, was

cited for developing semiconductor heterostructures consist ing of layers of galli um arsenide or aluminum gallium ar-senide while working at RCA Corp. and Var ian Associates Inc. in the 1950s and early 1960s.

Alferov, now 70, did similar, though separate, work in Russia during the 1960s. Kroemer's work showed that transistors based on hetero structure technology could be superior to conventional opes. especially for amplifying currents and for high-frequency

applications. Devices semiconductor lasers based on beterostructures are used in satellite communications and in products such as optical data storage systems, mobile

# **Automaker Consolidates** E-Commerce

DaimlerChrysler to launch \$500M Net-focused unit

Purthering its effort to catch np to rival automakers such as Detroit-based General Motors Corp. and Dearborn, Mich. based Ford Motor Ca. on the Internet, DaimlerChrysler AG last week said that all of its e-commerce operations and investments are being consolidated into a new subsidiary heing Isunched with \$500 million

called DCX Net JUST THE FACTS Oversee Daimler-Holding, was described by Stutt-Germanybased Daimler-Chrysler as the mucleus of a corporatewide e-commerce initiative aimed at cutting operational costs and making the a company more ef-

Into One

All Rolled

Heading the new subsidiary are John Stellman, 82% of desktops will be running fast ethernet by 2002.

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reduce server bottlenecks without replacing your existing sat-5 copper wis infrastructure. Interf providood is server adapters help you take find advantages of your fast ethernal investment simply install as many as ingirt and configure for adaptive lead balancing, now, you have reducated network connections and consenseting high server throughput, not to ministon enough bandwidth to maximize your upgraded network. This is past one of the many new ways intel adapters are solving problems you here through clasters could solve, make sure you specify netel adapters, because in the surge economy what slows down your network, slows down your business. The intelligent ways occurred we fact zero graphs and your network, slows down your business. The intelligent ways occurred we fact zero graphs and your network, slows down your business. The intelligent ways occurred we fact zero graphs and your network, slows down your business. The intelligent ways occurred we fact zero graphs and the providence of the providence of

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# First Data Spins Off E-Payments Company

Disparate payment systems to be

bundled under eOne Global umbrella

T MAY BE A LITTLE late getting into the game. but Atlanta-based First Data Corp., the leading credit-card processor in the U.S. and owner of Western Union Holdings Inc., launched a \$600 million electronic-payments company last week

called eOne Global LP. The company will combine all of First Data's electronicpayments businesses, including a business-to-business payments service for use in online exchanges and a tool that less companies electronically pay federal and state taxes. But except for the tax busi-

ness, all of the online payments battlegrounds are already dominated by other, quicker companies, according to Paul lamieson, an analyst at Lincoin. Mass-based Gomez Advisors Inc. First Data has to move fast to gain ground on the dot-com start-ups, he said.

"This is their way of playing

"It is the small start-ups that

are looking at niche innovative processes that either enhance or create a whole new segment in the online payments area," he continued. "That's where the innovation is barrening.

### Planning to Expand First Data has bundled all of

its disparate electronic payment businesses under the umbrella of eOne Global. For example aOne Clobate SurePay, a joint vecture with Plano, Texas-based Entrust Technologies Inc., will provide a way for companies to make secure payments to other businesses in online exchanges and up and running until the fourth quarter, according to Garen Staglin, president and CFO of eOne Global. Another division of eOne CashTax, enables companies

to pay taxes to the federal gov ment and 20 states. It's a leader in its field, with 2 million business clients making 36 million annual payments worth

more than Si reili EOne Global also plans to expand into a variety of other electronic-payments products. Take person-to-person electronic payments. Currently, the leader in this space is X.com Corp.'s PayPal. However, Pay-Pal has recently begun chare

AT A GLANGE Crowded House EOne Global is planning to

move into o crowded businessto-business payments field. Used by: Businesses to send money to ndors and suppliers on online exchange

mader: Mone ver, but several players are emerging, including Financial Se Matrix.com, a consortum that includes Citi group Inc., Wells Farge & Co. and software maker @ Technologies Inc. Another con-tender is Clarges Com

ing for some of its services and has announced plans to raise rates even further, giving potential competitors a chance to break into this market. First Data will own 75% of

eOne Global. The other 25% will belone to (Formation Group, created by The Goldman Sachs Group Inc., The Boston Consulting Group and General Atlantic Partners LLC to back online businesses

### catch-up," Jamieson said. "Quite frankly, that should have been **Volunteer Brings Computers to the Bedouin**

Third World land gets boost from IT

Sean Osner returned to Egypt from lordan three weeks are. He was in a Bedouin comm ty of between L500 and 2,000 people in a village called Safawi, close to the country's border with Iraq. "It was like Mars," he said. "That kind of terrain - very barren. Lots of

Osner set up a community center with 10 Intel 486 computers and five Pentium IIIs for the local residents - mostly shepherds and goutherds to share with four popprofit en's occanizations.

At first, it might seem that Bedouins would have no need for the Internet, especially compared with more basic concerns like food and shelter. But the Internet can help local idents set better medical care and educations and it may even help bring money into the

"One of the things we de signed the community center for was to help the local women find markets in other

products." Owner said. "That would keep those traditions alive in their community." Osner's trip to Jordan was on hehalf of the United Nations

Information Technology Services (UNITeS), which received a mandate from UN Secretary-General Kofi Annan this past spring to bridge the digital divide in Third World

Working on another ITrelated assignment for United Nations Volunteers (UNV). which coordinates the volum teers for the UNITeS program. Osner (sean@tacc.ednet.net) recently visited the Egyptian village of El Ghar. There were 400 phones for 100,000 people, and those 400 phones shared a

### single phone line. **Dverwhelming Demand**

At a technology access community center in the Egyptian city of Zagazig, which has around I million inhabitunes, 4,000 people were waiting for a chance to use one of four available computer terminals. There is an overwhelming de-

mand that we can't possibly fill "Osper said. Visitors, many of whom -

have never touched a computer, learn how to use word processors and e-mail, do Internet searches and set up e-commerce sites. One page set up by a local

enterprepar can be found at www.tacc.esnet.net/tacc/mbob. Rabab's Leather Products is a one-stop shop for made-toorder outerwear. While Osner's Jordan as-

signment was for only two weeks, other missions can last as long as two years, said UNV spokeswoman Nanette Braun.

Volunteers receive travel expenses, insurance and a living stipend that varies country by country but usually amounts to between \$800 and \$1,500 per month. People can apply by visiting the UNV web site at WWW.MRV.OFE

Experts say the vols could play a key role in helping esses in developing countries hop on the New Economy bandwagon - not just in setting up the computers but in teaching people to use them. "The shortage of skilled per ple is one of the biggest prob lems developing countries face in joining the digital revolu-

tion," said Bruce McConnell. president of McConnell International LLC, which does technology and management policy consulting in more than 120 COURTNIES And not only the local econ omy benefits, said Ernest Wilson, director of the Center for

International Development at the University of Maryland in College Park. Markets are expanding fast in developing countries, he said, and that's one reason companies like Cisco Systems Inc. and Motorola Inc. have been active in overneas education efforts for years. For example, Cisco donated \$3.5 million to UNITES in July for educational programs in more than half of the world's least-developed countries and said it would deliver the investment through its global Cisco Networking Acade

That's where the markets are going to be," Wilson said. So far, 23 UNITES volunteers have taken assignments in developing countries, includ-ing Benin, Botswana, Burundi, the Central African Republic Ecuador, India, Namibia, South Africa and Tanzania. Six additional posts are in the pineline for Bhutan, Jordan and Mongolia. For more info about the project, visit the UNITES Web site at www.





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# First Linux Development Platform Standards Are Released

leased last week, clearing the | together seamlessly. The first version of the new way for the adoption of stan-The time version or time new Lines and the new Lines and the new Lines are less than the new Lines and the new Lines and

The announcement

was Conference in Atlanta.

largest Linux distribution companies, including Caldera Systems Inc., Corel Corp., Red Hat Inc., SuSE Linux AG, Turbo-Linux Inc. and VA Linux Systems Inc., the group said.

"This is a big thing," said Scott McNeil, an open-source strategist at VA Linux Systems in Fremont, Calif. "Predating Linux, Unix was always trying to be unified, with no success." Now, with the adoption of Linux specifications, the future of Linux standardization looks brighter, he said. "To come out with the first version of a new standard is big stuff."

The specifications will mean that Linux developers will be able to work with standardized tools, kernels and libraries that will allow their applications to function properly across other Linux distributions, Mc-Neil said.

### Breader like

By using the LDPS, developers will be able to create and distribute software more quickly across the spectrum of Linux distributions, including Caldera OpenLinux 2.4, Conectiva Corp.'s Linux 5.1, Corel Linux OS Second Edition, Debian GNU/Linux 2.2, Linux-Mandrake 7.0, Red Hat Linux 6.2. SuSE Linux 6.4 and Turbol.inux 6.0, according to the Free

Standards Group "Standards allowing interoerability and portability are of crucial importance for Linux," said Dan Kusnetzky, an analyst at International Data Corp. in Framingham, Mass. "Survey after survey indicates that IT management will feel comfortable adopting Linux only when they feel confident that applications based upon one distribution of Linux will be easily transportable to other Linux

Dan Quinlan, president of the Free Standards Group, said in a statement that "LDPS is but the first of many planned specifications that are aimed to help both open-source developers and companies port applications to Linux. Having a single development reference to work from will greatly simplify the process of building Linux-based applications."

The Free Standards Group is a nonprofit corporation oreanized to accelerate the use and acceptance of open-source technologies through the development, use and promotion

of standards.



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# Notes App Vendor to

# **Work With Exchange**

dent vender for Notes-based appli sendard architecture for both pic error. CEO Lars Month Johanno

### **BM** to Build Plant

build a \$2.5 billion chip-making transit in Fast Flotell, N.Y. The com orn on east Fishkill, M.Y. The co my said the plant is part of its

ager of the technology and manufa-turing group; Paul Otellini will take

### NEC, Hitachi Agree to Outical Net Alliance

th memory chips, Japan-base ms HEC Corp. and Hitachi Ltd. e agreed to develop optical net

### ateway Hit With Suit

ness but did not recent

# Oracle: More Than Just The Database These Days

Condensing 75 products into two is firm's latest move in becoming an e-business

HEN GRACIT Corp. CEO Larry Filison called the PC a ridiculous device" at the European IT Forum in 1995, many industry onlookers chalked up his comments to little more than a per sonal rivalry with Microsoft Corp. Chairman Bill Gates.

However, when Ellison repeated those words at this month's Oracle OpenWorld conference in San Francisco. people listened as Ellison described Oracle's transformation from a database wendor only to a full-fledent e-burn ness focused on the Internet. "Software is destined to be come a service," said Ellison.

"We look at every (application service providerl not as a threat but as a potential customer." According to Ellison, Oracle wants to change the way software is manufactured and sold. As a first step, the company has embarked upon a somewhat risky plan to consolidate its 75

different product offerings into two Web-centric packages. "We engineer our products to work together. It's a fundamentally different view of the world" - one that's particular-

ly different from the traditional systems integration model. Ellison said. And Oracle has taken steps to prove it. In fact, according to

Chuck Roewat, executive vice president for remor technolo gies, the company saved a billion dollars last year by "earing its own doe food" - that is, by using its own software to convert Oracle from a traditional business to an e-business.

Users seem to be paying attention. "We're seeing the shift to the Internet in our users as well," said Rich Niemier, president of the International Oracle Users Group-in Chicago, "The fact that they use their own software is huge. Users think [Ora-

cle is more likely to fix glitches." The key factor in Oracle's

plans has been its recently released Oracle9i Database server and Oracle% Application Server (iAS), which consolidated more than 75 of the compamy's products. The iAS release also includes a patent-pending Web-cache technology that works with server choten to dramatically increase Web performance and is able to tolerate machine failure

"Oracle is far more than a database company," said Phil Russom, director of business intelligence at Hurwitz Group Inc in Framingham, Mass. \*In hindsight, I can now see that what I once thought was an unrealistically aggressive and possibly dangerous product

Net income: Up TTPo to \$50°W Database licenses: Up 32% to \$565M Application Removes: Up 42% to \$56W Service revenue: Up 8% to \$1.58

Revenue: \$2.38

turned out to be a long-range and accurate vision of what is required for a broad, scalable and robust platform for Internet-based applications. However, the consolidation of products has both an upside and a downside, said Russom. Although it may simplify li-

censing and integration for many customers, he said, oth-AT A GLANCE Bringing in

The Bucks Oracle's growth for the first quarter of fiscal 2001:

consolidation plan has now ers may be forced to buy the ion server in order to get the individual products they need, such as Oracle's reporting tool "This may increase integration tasks and may possibly increase the cost of the software," he noted. And many long-time Oracle users say they aren't happy with pricing changes that have

accompanied the new products. Some customers told Computerworld that they're so upset by what they view as exorbitant capacity-based pricing that they're actively evaluating alternatives to Oracle [News, Sept. 18, Oct. 9]. There are other risks to Elli-

son's long-term vision as well. "I think the main missing element of their ASP platform is a competitive (Enterprise Java-Beansl application server," said Mike Gilpin, an analyst at Giga Information Group Inc. in

# Wall Street Whacks Tech Stock Values

BY KATHS FEW OND SOM The fall is proving to be more than just a season for many technology companies, includ ing Apple Computer Inc. and Dell Computer Corp.

Apple and Dell were on a long list of information technology vendors that last week warned Wall Street that their earnings for the quarter ended Sept. 30 will fall below expectations. Others on the list include Intel Corp., Silicon Graphics Inc., Storage Technology Corp., Compuware Corp. and Lucent

Technologies Inc Apple dropped a bombshell Sept. 28, reporting that fourthquarter operating earnings would be about \$100 million -33% lower than the \$165 million third-quarter earnings would

expected. On Oct. 4, Round. Rock, Texas-based Dell said its grow only 7% over secondquarter calor of \$767 billion Apple's stock experienced Wall Street's wrath, falling from \$53.50 oo Sept. 28 to

Dell's stock remained steady, ropping from \$28.19 Oct. 4 to \$23 in trading last week Analysts said PC manufac-

turers are suffering as a result of lower consumer demand. Teople have already bought the equipment they need, maybe because of YZk, so there's a backlash," said Terry O'Brien, an analyst at Branch Cabell & Co. in Richmond, Va. Consumers don't feel a need to buy a new computer, even with the releases of Microsoft

Corp.'s Windows 2000 and Iptel's Pentium IV. O'Brien said

itional Factors Concerns over higher interest rates, a Europeao econo slowdown, the value of the euro and higher oil prices also

helped produce lower PC sales, according to analysts. "Investors will stay on the sidelines with PC manufacturers ... going forward," O'Brien said. Investments will stay flat | Stamford, Conn. )

months or longer, unless interest rates decrease, oil prices ease and capital expenditures and personal spending in-

But other analysts said they disagree "These fears aren't instified, but it won't stop people from selling in the short term," said Patrick Dunkerley. an analyst at Securities Cornoration of lows in Cedar Rapids, Iowa

During this current period of slumping sales. Dunkerley said, it pays to be a buyer and reinvest in other good names such as EMC Corp. in Hopkinton, Mass., and Network Appli

ance Inc. in Sunnyvale, Calif. A key development for the PC manufacturers will come this week when IBM reports its earnings. "It could pick up the industry ... [IBM] is the microcosm of the industry," said Gary Helmig, an analyst at Wit SoundView Group Inc. in



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MARK HALL

# The new IT leader

IKE MOST Computerworld readers, you probably got where you are by proving your technical chops first and your managerial prowess sometime later. Trading war stories about the ins and outs of \$/390s, Unix, database schema or network topologies is a good way to stay in whether an ambitious developer

touch with your team. So it's natural for you to consider the same kinds of skills in others as you promote department managers

and even your successor. But that would be a mistake. This is not to disparage hands-on marts. Technical talent will always be needed. The lack of it has set back important corporate business objectives, directly hurting the bottom-line performance of too many

organizations. But a different brand of IT management savvy is essential in the Internet era. One new skill you should be seeking is outsourcing manag Like it or not, most of what an IT staff does today will be outsourced in the next three to seven years. Desktop application support.

Server management. Software upgrades. Backups. You name it. In the name of the almighty ROI, these classic insider IT tasks are going out the door along with some of your best people who used to do them.

Not so long ago, it was critical to understand not just what a system did, but how. Without knowing how, you couldn't determine whether IT projects had a chance to succeed whether



more important to find and promote people in IT who understand more about developing relationships be tween users and outsourced suppliers. The new IT leaders will know instinctively which service provider will do the right job for the right ptice. They will know whether an SLA is right for the user, how much IT needs to supervise the relationship or whether to simply let the

Those days are vanishing. It's far

end user do it on his own This week's cover story by Gary H. Anthes (see page 80) reveals the many ways in which poorly chosen application service providers can undermine IT objectives. His report points to a need for IT to groom new managers who understand more about constructing business relationships than they do about cool new features in Windows 2000.

The good news amid the bad in Anthes' story is that CIOs increasingly understand that they need to develop outsourcing managers as much as, say, Java programmers. The war stories won't be the same, but the bottom-line

DON TENNANT

### At long last, 3Com makes the right choice

PUTTER. SPUTTER-SPUTTER. Look! 3Com is going to crash and burn! No, wait! It's coming out of the tailspin! It's going to make it!

That was close! Good thing 3Com finally had the sense to replace the pilot. The last thing we need is another IT vendor that becomes an acquisition target due to an inability to compete.

That's exactly what stood to happen if longtime CEO Eric Benhamou had not announced last month that he will eject on Jan. I so Bruce Claffin can take over. And the timing was impeccable.

Benhamou's descent came as 3Com announced its results for the quarter that ended Sept. 1. The company managed to put a positive spin on the fact that it suffered a net loss of \$41.3 million, only because it had taken a roof dive the previous quarter when it lost \$163.7 million. That enabled 3Com's public relations flack to say with a straight face that Benhamou was "not making



this transition when 3Com is in trouble and is beaded in the wrong direction." When you consider that for the same quarter last year the company actually made onite a bit of money - \$113.6 million and change - it's a stretch to contend that the company was out of trouble when Benhamou announced his exit.

I never thought Benhamou had any business sitting in the pilot's seat in the first place. I remember interviewing him eight years ago and being tremendously entertained by the fact that his idea of an interview was showing me a Power Point presentation about his company What kind of a CEO needs to rely on a bunch of PowerPoint slides to convey his thoughts? The same kind of CEO, perhaps, who would abandon his big enterprise users by exiting that market after those same users spent lots of money, which in turn on abled 3Com to report figures way up in the black - \$506.3 million in net income. That's what Ben-

hamou did in March But 3Com can't be faulted too harshly for the timing of the change at the top. Although Claffin should have become CEO when he was brought on board in July 1998 as president and chief operating officer, at least 3Com didn't wait until it was

too late. That's the fatal mistake Digital Equipment made. Before he made the move to 3Com, Claffin was



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### NEWSOPINION

CEO Robert Palmer's No. 2 at Digital, heading worldwide sales and marketing. I met with both Claffin and Palmer about a year before Compaq's 1998 acquisition of Digital and came away convinced that Palmer would have the decency and good sense to step down so that the much more capable Claffin could take over. I was wrong. Chaflin should have been named CEO the moment he joined the company after 22 years at 18M. But what really burt is that Digital didn't correct that mistake in time. Fortunately for 3Com's users and investors, it did. 9

ALAN PALLER

### Visa leads charge for better Web security

MAGINE BOARDING an airplane knowing that no one is absolutely sure how to check its airworthiness and safety, and not knowing whether the people who checked your plane were qualified in any way. That's the world in which the vast majority of Internet-

connected computer users live today. Internet-connected computers are at risk. And it's clear that anyone who does business on the Net is vulnerable. Corrections, defenses or patches exist for most flaws, but when they're not installed, the systems are vulnerable and attacks

Succeed A key element that's missing in Internet security is a set of practical, widely accepted and nonproprietary operating standards specifying in detoil bow systems should be configured and oper-

ated. Such cybersecurity standards would be similar to the maintenance and preflight action standards that every airline uses and every passenger has a right to demand.

Without widely accepted standards, organizations will continue to install computers blindly, hoping they'll be protected by obscurity or luck. If the global economy weren't dependent on the

Internet, such wishful thinking might be accept able. But today, every unprotected system connected to a high-speed communications line is a loaded weapon that attackers can use against e-commerce leaders, communications and power

companies, and national governments. Of even greater risk for e-commerce is a bus ness partner that doesn't protect its systems, thus tting every other electronic partner at risk. It isn't surprising, then, that Visa, the firm that stepped forward to begin solving the problem, is

connected to a very large number of other companies. Visa processes \$1.7 trillion in transactions every year, or more than \$4 billion every day. To do that efficiently, Visa electronically partners with 21,000 merchants that carry its loon.

In late July. Visa issued a new set of 10 requirements that each merchant partner must meet if it wants to keep the logo. They range from having specific firewall settings to changing default passwords, and they cover pasches, encryption, and virus software and more. What makes Visa's "Ten Commandments" so valuable is that they're practical. Most organizations that understand se-

curity already comply with them. Visa's great contribution is bringing the security neophytes up to a safety level comparable to that of security-

savvy organizations Visa has provided the Internet community with an effective starting point for creating the global standards on which Internet safety can be built but there are still significant tasks to be completed. Visa's starting point must be broadened to encompass the new security requirements being established by law (such as in the Health Informa-

tion Portability and Accountability Act of 1996 and those followed by auditing and international standards organizations.

To accomplish that, representatives of dozens of federal, state and local government agencies are working with academics and corporations (led by representatives of Visa and Merrill Lynch) to convert the Visa effort into one global set of

Their not-for-profit organization (which my organization also helped form) is called the Center for Internet Security. Every organization that wants improved Internet safety can belo make the center's efforts successful by participating in the process of shaping the standards, ensuring that every deployed system has been made safer in accordance with the standards and ensuring that those settings have been validated by someone who has been certified to test compliance

There can be no confidence in the Internet's reliability without broad-based security. It's time to stop whining about the lack of security and start ensuring that every system of every business partner meets at least minimum safety standards. 9

### READERS'LETTERS

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[News Opinion, Oct. 2].

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companies aren't smart enough to protect their assets, intangible or oth erwise, they deserve what they get when

things go wrong. Christopher Case President Casey Advisory Services and Technologies Inc. Concord, Mass. casev@world std com

More Letters, page 41

and clarity. They should be addressed to James Eckle, letters editor, Computerworld, PO Bo 9171, 500 Old Connecticut Pat

### Protected payment

ONSUMERS should be wary of Jusing new forms of payments [\*Older Systems Hinder E-Pay its," Page One, Sept. 251. There are a great many legal protections for payment by check or credit card that don't

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cies Get Poor Grades for Security" [News. Sept. 18], the deputy CIO at the Department of Agriculture says that his agency fended off some last quarter and that alThe future of your e-busines is being decided right here

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LENNY LIEBMANN

### Don't fall into the Web development speed trap

THE POEM "The Charge of the Light Brigade" describes an intrepid British cavalry unit that bravely rushed headlong to its own destruction. When it comes to e-commerce many IT departments are following sust. While one must applaud their zeal and expediency. many are moving at light speed into an amhush

- with potentially fatal results. Speed itself isn't the problem. The danger arises from how companies are reaching that speed. Many are turning to strategic partners such as

Web application server vendors and managed hosting services whose offerings promise to significantly accelerate timeto-market by eliminating the time and expense of developing excommune

infrastructure in-house. Unfortunately, there's a big price to be paid for this kind of fast-lane living. Sure, using one of today's sophisticated, prefabricated Web application server environments enables you to avoid a lot

of the infrastructure development hassles that you'd encounter if you had to design all of your own database connectivity, object models and fail-over mechanisms from scratch. But the speed these vendors are selling is as addictive as what

drug dealers peddle on the street. Here's what tends to happen: An IT depart-

ment gets major time-to-market pressures to roll out a new e-commerce offering. In order to make the deadline, it selects an application server vendor that can provide a lot of ready-made technology. But to take advantage of this bells-and-whistles application server, the department has to implement the company's e-commerce business logic using scripts, "wrappers" and/or other develop ment components that are highly vendor-specific. If it works, it does the same thing again and again. Within a few months, all its critical business logic is firmly encased in a highly proprietary development environment. Voila! Vendor lock-in!

What's particularly ironic about this phenomenon is that the Web was supposed to be the place where we were going to use pure standards such as HTML, Java and XML - to avoid the proprietary quicksand of previous development environments. But in our rush to market it seems we're willing to trade long-term openness for short-term business results.

There are some solutions to this problem be-

sides avoiding application servers altogether. One is to choose your server based on the kind of exit strategy is provides rather than just going for maximum features. Another is the emergence of standards, such as Enterprise JavaBeans, which would make it easier to migrate software components from one application server to another.

But the most important solution may be to reevaluate our obsession with pure speed and our overemphasis on being "first to market." As the honeymoon ends for many first-wave dot-coms. we're seeing that being first to market may sim ply be the first to fail. The right business model. a strong customer focus and flexible technology are more vital to profitability and growth than a press release with the word "first" in it. The race. as the Bible says, is not always to the swift.

So beware of the speed merchants - unless you really want someone to write a poem about your c-development brigade's valuant, senseless death at an early age.

WILLIAM M. ULRICH

### The CIO has a new role for a new era

THE FACE OF information technology is changing. Business units, outsourcing vendors, application service providers (ASPs) and supply chain, electronic-market and other consortia have taken over many tasks that have traditionally fallen within IT. Dispersing the management of these functions has resulted in greater

flexibility in deploying business-driven solutions but it has also reduced IT's ability to standardize. stresmline and constinute

roles and responsibilities has also diminished the CIO's ability to impose policies and dictate rosults. Yet the CIO must still find ways to enable key business initiatives through the effective and efficient use of technology Outsomering and ASP

This distribution of IT

vendors, distributed c-business initiatives and third-party consortia arc here to stay essentially

ending the reigns of monolithic IT organizat at which CIOs had complete control over all information-management functions. But these new dynamics have given rise to fragmented initia tives that are poorly coordinated. Left unchecked. that fragmentation will escalate. To alleviate this situation, top-down command-and-control models must be replaced with organizing philosophies that facilitate communication, collaboration and adaptability

The CIO is best suited to lead the enterprise into this new era. More than other ton-level evecutives, he understands IT and how it enables business strategy. I have spoken with CIOs who understand the challenge of bridging the gap between business requirements and the ability to deliver solutions to fulfill those requirements in a timely manner. The CIO must be able to influence and inspire internal and external business units to work toward a common goal in a coordinated fashion. This requires the CIO to be a leader in developing a clear vision for IT and motivate executives and all employees to pursue this vision.

As part of IT's transformation into a collaborative organization, the CIO should strive to reshape IT so that distributed functions can be coordinated under a common information management infrastructure. This requires bringing IT. business units and external business partners together to collaborate, share ideas and self-organize to accommodate ongoing change. The selforganizing aspect allows technical and business units to form working teams without reorganizing from the top down each time. The CIO, in tackling such an initiative, would demonstrate leadership by sacrificing command authority to create a more effective IT organization. In other words, decisions will be delegated to units performing the tasks associated with those decisions.

Here are three steps the CIO should take in

transforming the IT organization: 1. Determine how information is processed and managed. The CIO and a cross section of business and IT representatives should convene focus groups with each business and technology unit that performs IT-related functions. This should include any third parties contracted to perform IT tasks. The findings establish a basis for the next steps, which include selling management on the need to transform the IT organization. 2. Work with a comprehensive cross section of business and IT representatives to develop a vision for the new IT organization. This new organization builds upon existing strengths while eliminating the bureaucracy that inhibits or discourages communication and collaboration. As part of the transition to this new organization, the CIO works with all relevant parties to define the purpose and principles that hind participants under a common organizational framework 3. Finally, create an IT "constitution" that defines each group's purpose, role and relationship with other groups. In the new organization, the CIO has no direct reports but convenes a working council of representatives from each major functional area. As council chairman, the CIO become a strategist, motivator, collaborator and leader.

The CIO is in a unique position to deliver busi ness strategies through IT. Change is always difficult, but a strong CIO will have the leadership qualities needed to steer the enterprise through these dynamic times. It's time the CIO leads the effort to reinvent IT - and the CIO's role along the way.

### Anyone you want to work with. (D) COMPAG IBM THE PER STATE OF THE STATE OF unisys **D**DS AVAVA Qwest. EMC<sup>2</sup> Getrynics. marchFIRST **ONCR iCL** COMARK **♦** Cambridge internosis @presence

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# The bridge between the paper world and

our revestment in IT effestivuture is hope. And the impact of the internet on your IT budget grows larger every day. You we poused tons of insources into EPP systems as well as event and and document workflow systems flow much? Well studies show that an much as 50% of an everage IT budget can be snocked with managing documents.

I Trust. There are more documents online than were before. But it also the that we are creating more paper documents than ever before twice as many as just five years ago. The reason as simple. Most companies have lots of off-camps that turn electronic documents are opport documents, but almost no one has lots of or-ramps capable of converting pages documents and occurrents one converting pages documents and occurrence and converting pages documents and occurrence and the converting pages and the co

J in fact, giving you new ways to leverage your IT investment by bridging the frustrating gap between the paper world and the electronic world is exactly what the Xerox Document Centre system was designed to do.

## It's about document imaging for every workgroup.

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PC faxing and finishing. What's more, by making document imaging an "everyday" function, the knowledge and information recorded in paper documents can now become a seamless.



# the online world is now open for business.

Scan directly to the Web or virtually anywhere else you want to.

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is certainly efficient, but the important question remains. Where is all that information going, and what can you do with it once it gets there? → Document Centre lets you scan directly to

industry-standard messaging and collaboration platforms Scan 65 ppm

ARCHITECTURE

SYSTEMS

Lotus Notes 3 easy steps or Domino Doc 1 Select scan folder 2 Select destination → You can

Exchange.

3 Press green button scan directly to a Web

repository, so anyone has instant access to information from a remote location → Scan to your PC desktop, and with

TextBridge software bundled with MT 4 0 6 2000 Document Centre Appletalk rell NerWare 4.X you can drag and drop your scanned Ring 14/16MB TCP/IP image into any one of OS/2 WarpS 150 industry-standard wt 10/100

applications. You won't need to re-key your documents.

ScanSoft PaperPort and

 □ Or scan documents to the network, and using software like Xerox DocuShare, users can access them through any current Web browser on any platform. It gives you an electronic file cabinet that's a very efficient way to share knowledge and dramatically reduces e-mail traffic

 □ Or combine Document Centre with Xerox FlowPort FlowPort is a Webbased software platform that The Web manages the flow of

documents from namer to digital and back again in dramatically new ways. For example,

Letus Notes FlowPort gives mobile workers the freedom to Xarax Doca-Share access and print any documents on the

Web without using a PC And when it comes

to getting your digital documents back into paper form, Document Centre's open architecture supports all

major industry printing standards and encourages

ERP applications like SAP.

→ In short, things once limited to paper

and easily printed wherever you need them. It doesn't just increase productivity, it decreases costs and saves time. Turn the page to learn how one of our customers is already benefiting

are electronically archived, accessed, shared

third-party software solutions to thrive. So you can print not only from your desktop or from the Web but also directly from your mainframe, including

## Paper or digital, it's about solutions that leverage the network.

We have hundreds of oustomers who report impressive results. But here's one in-depth story of how a Document Centre solution reduced one organization's work-cycle time from three days to just three minutes.

#### The Customer:

Center for Technology Management, in a prominent Midwestern research institute

#### The Problem

There are dozens of huge file cabnets overflowing with documents—patents, notes and contracts about inventions the university owns. Each year up to 1,500 new folders are added. Every day, dozens of people call and request files. By law, the university must provide public access to any of these thousands of complex scientific documents for reference, revision.

notation or collaboration. And it must be done for 25 years The commitment of time, space and personnel is large and growing

# The Solution:

Combine Xerox FlowPort and DocuShare with two Document Centres. This gives you a search engine for all your documents. Now when people need a document, they just check off the file they need on a FlowPort cower heat, so an irran the Document Centre, and FlowPort softwere finds and sends the requested electronic file to a server that con print, e-mail or store the document. What's more, once the file is stored, DocuShare lets you manage it on the Web, giving subtricted users instant access for sewing, downloading and printing documents from snywhere at any time.

#### The Result:

A process that used to take three days can now be completed instantaneously.

Documents are accessed and shared electronically Paper is eliminated whife collaborative work processes are made simpler. Security is improved Those 20 fee cabinets are soon history. Costs are lowered.

Time is saved



#### Online or oll, it's about a simpler way to share knowledge.

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# **NEWSOPINION**

# READERS' LETTERS

#### Tuition plan is in order

FTE SIX months and a few thousand dollars in ruleion and oracle—I had hopes of getting my face in the door with the property of the control people of entry my face in the door with a ruleion and the second people of the property of the

are holding out for people with years of experience in the current technologies. If employers refuse to his U.S. citizens because of their lack of experience and insist on foreign workers, they should be required to fund some type of tuition relief for Americans who are returning to school to learn new skills, and to subsequently use them in the workplace. Remend J. Brauss.

### Arington Heights, III. 129/04/Pyahou.com Carmivore review process undermines privacy rights

ME GOVERNMENT will do all in its power to keep Carnivore secret and try to divert the review so that the people will never know if our freedom to priva cy is being violated (\*Government Error Exposes Carnivore Investigators; ACLU Blasts Team for Close Ties to Administration." Com special come Oct 51 I find in die gusting that truly independent people were not chosen to review Carnivore, And I believe that Congress and the courts

are our only avenue to stop the povernment from being able to look into the people's private mail. Russell B. Sharpe Manager, support sevices Saudi Operaton & Maintenance Co.

Saudi Arabia

D in ANYONE really expect a thorough, trushful and accurate review? Congress has apparently shelved (read, "given up on") seriously considering any privacy legislation for at least the

next is months, so why worry!

I hope all netizens carefully rend the Wen Ho Lee interrogation transcript. It'll give 
everyone who's ever sent an 
e-mail some indication of 
what to expect when Carmivore gets hold of their communications.

New York

A NYONE WHO doesn't have top-sceret clear-active wouldn't have a clue how to evaluate Caraivore. Anyone who does have top-sceret clearance is compromised. Who are they going to pick? Santa Chuz?

werew Settler

#### Princeton, N.J. BellSouth has a glitch, too

According to "Glitch at Amazon.com Expos es E-Mail Addresses" (News, Sept. II). the compony's "Associates" were shown the e-mail addresses of other

associates. I have seen an even score glitch on BellSouth's Web site. When attempting to view gree-vious months' phone bills, I was shown not my phone bills, but those of other BellSouth customers, including details of long-distance calls. I e-mailed BellSouth about this but re-ceived no response.

Paul Hammond Huntsville, Ala.

# The right .dir-ection

"dir" Top Level Domanin "Novell Proposes dir Domain for Directoriest." Computerworklasm, Oct. 6) makes as lot of seeme to me. It is both a practical and elegant solution. The atternatives identified in the article (from Son Microsystems and Alice's Registry) have major drawbacks, and partial implementation has proved to be problematic in the current error

The concept that the proposal should be rejected because it subverts the Internet. "for commercial purposes" is ludicrous. Come on; businesspeople are people, too. They have a right to ask for things to

ament.

work more efficiently and conveniently. Novell's idea does just that. It may not be a big idea, but it does make sense, and ICANN should go for it. Arthur Grapory Dahran, Sauf Arabia

#### Strange justice

If MICROSOFT were truly not guilty, it would be appalled that its appeal was not accepted immediately by the Supreme Court so it could be exocerated quickly [785]. crosoft Seeks Free Months for Appeals Filings," Computerworldcom, Qct. 6.1 It has shown a clear understanding of "pastice delayed is justice denied."

# Ponchatoule, La. All furn and games

H. THANKS 2 lot. Computerworld, for that the QuickStudy on "Easter Eggs" (Technology, Sept. 18). What, do you suppose, will be the total loss of productivity to businesses around the world as Computerworld readers — and all their friends —

play Microsoft Word pinball or fly around inside a spreadsheet trying to find the Encel monolish? Now that I've found the monolish. I had best be getting back to work (just as soon as I e-mail my girlificend about

this). By the way, that punball game was pathetic! Jack Kaufman Senor programme/bral/st Brightmon, N.Y.

## Power for the people

New Y BROTTER is an expossible for the professional 
probably the most difficult 
driving job in existence the 
delivery, without a scratch of 
new cars. He's always learning 
more about how to do his job 
better. He'd be interested to 
know of Shawn Buttan's theories (Readers' Leners, Sept. 11) 
tata the 'a medicarrily who 
owes his position to seniority. 
The myth that unions are in-

terested only in seniority in

laid to rest.

place of real skills needs to be

iOct. 2], but I wanted to note that kilobits means 1,000 bits, not 1,024 bits. The latter refers only to computer mem-

Edward G. Nilges

sanozal TTI Pyshoo com

ere's my two bits

Chicago

#### o offense taken

N THE Oct. 2 issue, Christine Wagner wonders "if male readers would be offended seeing a man in a G-string selling a router" [Readers' Letters]. This male reader certainly wouldn't: when may I expect the first and Paul Hardy wonders if sex sells managed hosting solutions. Maybe not, but it might make a dry newspaper a little more fun. And it did get his attention.

Stan Kerr Computing

First of all, many union-free

data processing shops use se-

benefits. Lazy personnel prac-

ly in more conservative indus-

tries. Second, the irrationality

of using age appears in many

cutting-edge environments in

a new form: reverse seniority.

in which younger employees

to disrupt good practices, at

times for the sheer hell of it.

is thrown overboard because

those experts are represented

propoganda.

as old fuddy-duddies by media

But having said this, I am

not convinced that program

mers need unions, and I am

less convinced that managers like Mr. Button should be in

unions. This is because, since

1948, U.S. businesses have en

Hartley Act, the idea that col-

forced, by means of the Tafe

lective harmining must re-

strict itself to pay and bene

fits. "Management preroga-

tives" in U.S. workplaces me

that work rules and control of

the workplace must, in our so-

The problem is that in a real

ciety, remain in the hands of

sense, programmers enforce

the actual rules. We need in

stead to decide that work

places are not fully private

property but that the com

grammers and union truck

drivers, should have a say in

the way business is conducted.

ENTOYED the Technology

QuickStudy on bandwidth

nity, including managers, pro-

Thus, expertise in Visual Basic

are permitted and encouraged

sion companies, especial

niority in assigning pay and

tices are alive and well in

& Communications Services University of Binois Urbena-Champaign stankerr@uuc.edu

would Love to see a picture of a man in a G-string selling routers, and I hope Computerworld will find an advertiser willing to strike that blow for ogual opportunity. For an approprise fee, I'd pose for the ad myself. Ferp Duke EPets, Issus

R EADERS WHO objected to the DataReturn/Victoria's Secret advertisement have a right to their opinions. but Computerworld's policy scens perfectly sound. Victoria's Secret is a well-respected, eithical retailer. DataReturn was promoting its success in supporting that tre-

tailer's Internet marketing efforts. The picture in the advertisement was relevant and in perfectly good taste. You homored your obligation not to censor legitimate advertising. As to Ms. Wagner's question. This male might be bored or amused by "seeing a man in a G-string selling a router," but certainly not offended.

Douglass W. MacLean CEOEswarenow.com LLC Nashua, N.H

#### aska Air was there first

THE STORY "UN Air Installs Kiosks for E-Ticketed Customers" [Computerworld.com, Oct. of failed to mention that Alaska Air has been using such kiosks for several years.

E-ticketing and kiosk check in (including baggage) is a normal thing for Alaska Air travelers.

Ed Klein IS business analyst Snohemish County Public Utility Desnic Everett, Wash.



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# BUSINESS

#### **WEB AS SAVIOR?**

Floor and ceiling maker Armstrong bas been struggling financially for the past two years, and its stock has plummeted from 590 per share to less than 56. The company hopes its new Web strategy can save it from disaster, but many analysts say it won't work; 444

### IT'S ANCHORS AWEIGH FOR EDS

Who ever expected to see the largest, most revolutionary information services contract come from the military? The U.S. Navy's recent contract with EDS definitely turned heads. And it may blaze a path for government agencies that want to buy information technology functions but not the IT itself; a 46

## LANGUAGE Barriers

Germany lags far behind other countries in Internet usage, but analysts predict a boom over the next three years that will more than double the country's Internet-penetration rates. So German companies are now racing to emplassize their broad and deep German-language content before our by foreign companies, s 48 foreign companies.

## YOU SEND ME

It's a busy time at Sendcom as the company gears up for a boliday site relaunch. But the long bours are worth it because the dot-com puts a high emphasis on its IT staff, says Josh Roman, director of e-commerce applications. • 50

## THE LATEST BUZZ

Does your new CEO have the DNA for the job? Thinking about hiring a new VSP? Yup, you guessed it. The buzzwords you've finally mastered have already gone stale. It's time for yet another edition of the techno-edition of the techno-

# speak dictionary: • 55

How do you, the new CIO, earn the trust of already skeptical customers? What ideas can you offer to turn around the dire financial picture at your company? Computerworld talks with two CIOs — one with a business background, the other with technology experience — about bow they would handle various

# CIOS WHO

Stephen Rave is the CIO at GeneralCologne Life Re in Stamford, Conn. He's also a founding board member of a local nonprofit group that makes affordable housing available to the community. And he serves on the Norwalk Community College Information Technology Advisory Council. Rave may be in the minority, but be's not alone. Meet some of the IT world's biggest philanthropists. > 56



# THE CYBERSPACE UNDERGROUND

NOW WELL DO YOU KNOW that unassuming network administrator in the corner cube? Imagine him returning home from work and changing out of his jeans-and-T-shirt uniform into a leather Goth getup. We take a look inside the world of the hacker underground, where quiet programmers transform themselves into the freedom-fighting radicals of cyberspace.

# Tile Maker Looks to Web for Lifesaving Jolt

Analysts cast doubts on online strategy

BY TODD & WEISS

Faced with two years of rough financial performances and tough times in its key flooring and ceiling tile markets. Armstrong World Industries Inc. is hoping the Internet will help improve its health.

The 140-year-old company has spent this year putting to gether a new Web strategy to help cut production costs, improve its market share and expand its customer base. But

analysts say the Web isn't likely to rescue Lancaster, Pa-based Armstrong from ancial woes.

The problem, said Chris Winham, a financial analyst at The Goldman Sachs

Group Inc. in New York, is ng is "the market leader in a low-growth or nogrowth industry - that being

Armstrong's financial struggles have shoved its stock into a free fall, plunging from an alltime high of \$90 per share in April 1998 to \$5.63 per share on Oct. 6. But despite what critics say, the company is determined to use the Internet to reverse

"We look at (the Internet) as one of the very best opportunities we have to help drive our top lines," said Frank Riddick III. Armstrong's president and chief operating officer.

Beyond changing its Web site, which was launched in 1994, the company is incorporating several core come nents into its new e-commerce approach, Riddick said.

Armstrong is participating in online marketplaces such as Pittsburgh-based FreeMarkets Inc.'s FreeMarkets.com to buy raw materials at lower prices merged its 30 global and deental Web sites into one. giving visitors a central place to visit and learn about its

The company said it also

hopes to expand its market by targeting voupeer shooners. In researching its Web strategy the company learned that the Armstrong brand name wasn't well recognized by people

younger than 35. More detailed product spec ifications will be available to encourage home builders and architects to use Armstrong products. There will also be new tools for professionals to acquire the company's prod-

ucts through competitive bidding marketplaces on industre-connected channels. "We do see this as a major opportunity for us," said Chakib Bouhdary, the company's

vice president of electronic business transformation. Armstrong has invested at least \$8 million in its Web site this year, hiring Proxicom Inc.

and maintain the new site. The company has also allied with other companies online including Redwood City, Calif. based improveNet Inc. Armstrong has a banner link at Improvenet.com, where consumers can get information on home-improvement projects. The link brings about 500 to

strong's site each day. "transform" their busin channels to be successful.

700 visitors directly to Arm-Laurie Orlov, an analyst at Formster Research Inc. in Cambridge, Mass., said older firms such as Armstrong can using well-implemented Web strategies, but the efforts must be well-synchronized with existing sales and marketing Freeport, Major-based reyounger consumers who pre-fer to shop online rather than with its catalogs, Orlov said "There's no reason that Armstrong can't do the same

thing," she said However, Winham - said. putting money into the Inter- | increased Internet presence.

bottom line as a result of using Margaret Whelan, a financial analyst at UBS Warbure LLC in New York, said companies don't typically get the leverage they expect from an



net is "not on the top 10 list of investment drivers in this industry." He added that beyond in Reston, Va., to help create whole new market with real benefits to Armstrone's now," Whelan said \$

"I don't think it's the catalyst Armstrong needs to jump-start the company out of the downcost savings, it's difficult to see | turn - the funk - it's in right

tailer L.L. Bean Inc. was able to use the Internet to find a PIMM FOX/VOICE FROM THE VALLEY

# Military precision

RE YOU DOING IN THINGS at once? If so, you understand how simply scheduling the workday has become a modern business nightmare. So imagine running a major call center. where organizing the schedules of dozens of workers can literally mean the difference between success or failure. Too many people

nanning the phones and you have a money-bleeding situation; ton few, and irate customers will make your life

In an army, the parallel situation would be if troop move ments, deployments or job rotations were bollixed up. Ofer Matan, the chief tech nical officer and co-founder of

Blue Pumpkin Software Inc. in Sunmyale, Calif., worked on just such a problem for the Israeli army and has applied this intelligence to the obiquitous world of call centers. "We have 150 agents an-

swering credit union member questions," says Pamela Treischel, call center manager at The Boeing Co. in Tukwila, Wash, and a user of 8bue

Pumpkin software. "We used to use Excel spreadsheets, doing everything by hand," says Treischel. "But with Blue Pumpkin, we were able to use our historical

patterns and calls and schedple agents to meet the demand we're able to see the window" The window of operations, that is.

The business world has turned where military precision and consis sency are essential to retaining customers and deliver ing service. At Boo

ing's credit union.

the call center handles queries from 280,000 members. "Companies need this ca bility because they need to be more efficient with their manpower and more precise in dealing with customers," save Matan. True enough, but does

the Stanford University Ph.D. believe that this kind of intellipent forecasting is the way to solve these scheduling issues? "You can take into account preific factors such as work rules, lunch breaks and per sonal vacations," he says, "In addition, this process under-

stands that certain people are good at certain things, and you can schedule for that. You have

I wondered how nuch further Blue Pumpkin could push the envelope of normal call center operations

wben I encoun tered Shane Larimore, the operaCorp. in Salt Lake City

All of Larimore's 222 call nts telecommute. Yes, using Blue Pumpkin, the reser vations agents are scattered about at their homes, armed with keyboards, beadsets and

dial-up connections Larimore, who has been working in call centers for five years, most recently at South west Airlines, says, "We can forecast call data on any given week and distribute the infor

ion to our seents. By having agents at home Kew Gardens, N.Y.-based let-Blue is able to reap the benefits of lower costs and lower seept turpover than those bir call centers of major airlines. The airline, which was start

ed early last year with \$130 million in venture funding. says it's going with "unprecedensed use of technology for case, safety and efficiency." With fares averaging 65% less than the competition (mainly on the East Coast), clearly not

all the technology advances are in the air. So the next time you find yourself overwhelmed by 10 things to do, tackle the mun-

dane tasks first, with precisi and care. After all, soldiers without coordinated schedules can't fight, just as call center arrents can't belo





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HACKERS
COST BUSINESS
45 BILLION.
THAT WAS JUST
A WARM UP.

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# Navy Deal Sharpens IT Focus

Hiring EDS lets military concentrate on content

NEW CAPTAINS of industry would point to the federal government as an example of efficiency and ingenuity when it comes to contracting for information technology services. The government is too large, inefficient and beleasuered by red tape to act as a model for anything, or so goes the old

However, things may have changed for the government two weeks ago, when the U.S. Navy awarded Plano. Texas-based Electronic Data Systems Corp. a contract for IT services that has been called the largest and most revolutionary of its kind - inside or outside

The five-year, \$6.9 billion Navy/

Marine Corps Intranet (N/MCI) contract awarded after an 18-month hidding process, is the largest IT outsourcing pact in history. The contract's additional three-year option could boost its value to more than \$9 billion, according

to Navy officials N/MCI will consolidate more than 200 Navy and Marine Corps networks around the world into a single, more cost-efficient and secure network that will be centrally administered and onerated by EDS. From Marines in a foxhole to Navy commanders aboard ships

or at bases several the world N/MCI will also more than 260,000 calless and Marines the ability to do everything from ordering additional supplies and viewing personnel records to coordinating military operations.

The goal, according to senior Navy officials, was to find a way to purchase IT services as the military does utilities such as telephone or electrical service. When the Navy started researching

N/MCL it found that it spends about \$1.6 billion per year on IT services However, once the Navy looked at what it would cost to upgrade and refresh all of its hardware, software and infrastructure on its own, that figure surpassed the \$3 billion-per-year mark. \*Keeping that organization connect-

ed is an extremely expensive proposition," said Navy Secretary Richard Danzig. "We realized that by turning it over to the private contractor, we could refresh that technology gradily because we could insist on performance guaran-

So the Navy decided to give industry tacit ownership of its entire IT infrastructure, for which it received a me tary credit for all infrastructure that could be used by EDS as part of N/MCL That credit is expected to bring the Navy's annual cost down to just \$1.2 billion per year, said Danzie Although all of the bidders, including

Computer Sciences Corp. (CSC) in El Segundo, Calif.; General Dynamics Corp. in Falls Church, Va.; and IBM, offered "strong bids." EDS's offer was deemed to be the best overall value, said loseph Cipriano, the Navy's program executive officer for N/MCL EDS must also meet perform measures established under more than 40 service-level agreements for net-

work performance, latency, security and network downtime, each of which includes incentives and penalties. For example, performance incentives for keeping the network up and operating correctly could amount to \$400 per seat, or up to \$150 million per year, said

Cipriano. "In order to do that, [the contractor] would have to delight everyone with the service shows the lessels that SNAPSHOT

NET INCREASE

#### Military Mission contract: Fire wars, with three colors were

Value: \$6.9 billion (or \$1.2 billion per year) option years could boost total to more than \$9 billion Current Navy spending on IT: \$1.6 billion per year

Winning vendor FDS final: To sentary more than 200 departs networks

with one seamless network owned and operated by a

Size: When complete, N/MCI will support 350,000 Many and Marine Corps users at bases in the U.S. Hawaii and Japan, as well as users abound New short medits. N/MCI will allow the Newy to buy IT services We it buys electricity from utilities, will enhance security by distriction proveds back from and will over the Many more control over technology standards and a better were of annual IT budget requirements

are normally achieved in commercial practice," he said.

The Navy also included incentive for enhanced security that will be based on the time it takes EDS to determine whether someone is trying to break into the network the time it takes FDS to respond to that intrusion and how the network is affected by the compa-

ny's response The Navy could also terminate th contract and hand the deal over to either CSC or IBM if it isn't satisfied with

EDS's performance. Olea Grkavac, executive vice predent of the Enterprise Solutions Division at the Arlington, Va.-based Information Technology Association of America, said N/MCI is a pure example of commercial best practices at work in

They took the best practices from the commercial sector and applied it to the Navy," said Grkavac, "And they knew they had to go to the commercial sector for that sort of experience."

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# BUSINESS

# Germany Lags in Internet Usage but Gears Up for Boom

Mark Twain labeled the Ger-

companies that understand its | its daunting syntax and vocabman language "awful," but local | that may not be able to adapt to | growing Internet economy.

unique complexity will have an
ulary in time to compete effecedge over foreign competitors
tively in Germany's rapidly
dot-com, whose portal competes with Yahoo and Lycos

and other Web sites targeting affluent Germans, said he believes that by developing "broad and deep" German-language content and offering unique services to the local population, German firms can beat U.S. companies at capturing online business from speakers of German.

Germany lags behind the U.S. and other members of the European Union in getting its citizens online. International Data Corp. (IDC) in Framingham, Mass., estimates that only 24% of German households are connected to the Web. That's less than half the penetration rates of both the U.S. and the Netherlands

However, IDC also projects

that the percentage of Netizens in Germany's population will more than double to 51% in three years. That increase is expected to boost business-tosumer e-commerce revenue from \$4.2 billion today to \$15.3 billion by 2003, according to IDC.

Part of Germany's digital dilemma can be tied to the difficulties it faces in dedicating information technology talent to Internet projects, according to the country's economics and technology minister, Siegmar Mosdorf

To compete with U.S. comranies that are exploiting Internet opportunities in his country, Mosdorf said, the German government needs to change regulations covering everything from venture capi-

tal investments to importing technical talent from overseas. Grove gaid that although his company continues to expand, ered by a dearth of qualified IT professionals, "We

could definitely use more C++ programmers," he said. Next month, Web.de is planning to add application service provider messaging services to its portal for German business

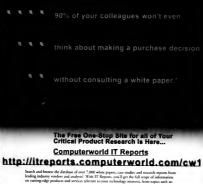
es, said Greve.

# Germany Online

a 24% of German households are conpenetration rates of both the U.S. and the

Informet usage in Sermany is expected to more than double to 5PHs of the population

in three years, according to IDC m The movesse is expected to boost buts from \$4.2 hillion ted



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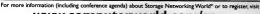


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# WORKSTYLES

# What It's Like to Work at .... Send.com

Interviewee: Josh Roman, director of e-commerce samy: Send.com, a high end ordere gilt-giving service Main location: Waltham,

er of information logy employees: 30 ber of amployee 1): More than 100 yees (and such a high ratio of IT I to and users? We've found so many ways to use IT to help business outside of the actual (e-commerce) business model - ways to make people more efficient and smarter \*\* Major IT initiatives: Oceaning and restaling \*a completely ment system that will allow us to (good and advertise) merthan in the past", developing a hamagrown customer rela

ox enhancing a custom built extracet that con nects the company with its lui-Ulment merchants nationwide and relaunching the site, which will feature a new look and new erce applications, in the for the heliclass edline for the site anch: Oct 30 can't give actual numbers, but

ship management and call-cen

renerally we expert 20 times at kind of pres does the relaunch and the holiday season put on the IT staff? "Longer hours and lots of informal meetic hallways. Some people are no 9 a.m. to 9 a.m. and

some are working 10 a.m. to whenever. And we're working kends." re people slooping in the ffice? "Not now, but around the launch, we'll probably have one or two people pulling an allrighter Starting the week, we're ng hotel rooms for the peo ey don't have to drive all the home after a long day

people I've over worked with." - Leste Goff

any downtime over the holi days would be fatal." Any perks for the long rkdays? We provide dinner at the office and have fully stocked refrigerators with pices, snecks and generally a couple of sor packs of beer. And we have a big, off-site, postlaunch party planned, with a

ecrita IT retresh Tresh Semanthe paces and these huge plastic barrels of Favorite stress reliev

ne, "rousing games of Quake III and Razor scooter races through the comdors "We've temprand a few people by coming around a corner loo quickly and running into some one with an armful of onescue repensation and bonuses: ettive salanes plus stock options. There are occasional

they're pretty lew and far between and usually based on going above and beyond the one of the things we're working on. Thera's definitely an engbut we're still working out the

annual review and informal Dress code: "Shorts and sun dals, most days. I have a meeting

hoday, so firm pretty dresped up in es, a dress shat and a vest Little perks: "Discounts on our products, which can be pretty cool when you tass a exotic car rentals

et perk: "A Be Sick With - a como dev for emyees, where we could go to an amusement park, go golfing, go to movies or get free transportation to an guilet mail, on

to company.

Would employees feel com-retable e-mailing the CEO, Bite Lannon? 'Defrotely talks to sust about everyone. Me: "We have a lot of reelly ant people here. This is, by far, the smartest group of

ED YOURDON

# Long-term thinking

RECENTLY CONDUCTED a software engineering seminar for a group of experienced, motivated, highly educated software engineers and managers who passionately want to achieve higher levels of productivity and quality at their company. We discussed familiar concepts like object-oriented methodologies, software reuse and requirements management. We also

discussed how these concepts fit into the Software Engineering Institute's familiar Capability Maturity Model. But the more we talked, the more obvious it became that the absence of these techniques within their IT organization wasn't the problem and that their problem wouldn't be solved no matter how many "silverbullet" techniques they introduced. The real problem, quite simply, is the conflict

between short-term constraints and long-term benefits. The political reality for software development teams is that they'll be rewarded if they deliver a system that meyes most of the users' expectations, without being too far over budget and too far behind schedule. If the latent bugs aren't visible to users and if the system is actually delivered oo schedule and

within budget, they're heroes. Delivering a high-quality remirroments document one that ac-

tually matches what the code does. may elicit a tenid compliment but foiling to deliver such a document won't even be noticed - not until months later, when the maintenance programmers try to add an enhancement to the system. All of the "ilities" associated with software development - portability. flexibility, scalability, reliability, maintainability - are rewarded only to the extent that they have been ideotified as major acceptance criteria during the project's development phase.

lo short, those downstream streogths and weaknesses of the system are ignored when it comes time to parcel out rewards and punishment. We may give them lip service in the IT best-practices initiatives, but in the famous words from the movie Jerry Maguire.

when it comes time to "show me the money," all that really counts is delivering a more-or-less working system, more or less on schedule. And until that behavior change pragmatic project managers will cootinue optimizing only the short-term benefits for which they're being rewarded.

It's convenient to blame this on today's shortterm business mentality - that the short-term

IT deliverables are part of the corporate plan to meet this quarter's revenue objectives and this year's profit expectations - so Wall Street won't punish the stock price. But companies do know how to account for long-term costs and benefits: That's what capitalization, amortiza-

tion and depreciation are all about. We also know that software package vendors charge an annual maintenance fee of 10% to 15% of the initial purchase price of a package So, we should be able to base our reward/punishment system on the lifetime costs of an IT project, rather than on just the first phase of development.

Say a typical IT system has an expected life span of six to seven years. (Yes, many of today's systems have a shorter life span,

possibly because they were designed so poorly.) Thus, the initial development cost is only about half the overall lifetime cost. Accordingly, only half of the overall bonus/reward should be issued for meeting the development schedule and budget; it would make more sense to wait until the system has survived the first year or two of maintenance to judge whether its overall lifetime costs will meet expectations

If the maintenance department were similarly evaluated, it might be more adamant that the "-ilities" have also been included in the development phase, which would lead to more emphasis on documentation, accurate requirements specifications and all those other Boy Scout principles we teach in software engineering courses. Realistically, none of this will happen in the average IT organiza

tion. Instead, senior IT executives will keep praying for miracles from ever silver-bullet methodology has cantured the IT manager's fancy. But prayers aside, you get what you pay for. And if you only pay for short-term benefits, that's all you'll get. I

Yourdon is editor of Cutter IT Journal, published by Cutter Consortium in Arlington, Mass. Contact him at www.yourdon.com.



Prayers

aside, IT

executives

get what

they pay for.



# DRAG. DROP. DONE.

0



ETZER-RA. a 6-foot-3-inch.
300-pound giant of a man,
paces between his "subjects"
in the smoke-filled Goth club,
Click \* Drzg, located in the
old meat-packing district of Manhattan.
Inside the club are leather-clad,
black-lipped females and young men
dressed in women's underwear.

creasou in women's underwear.
Yetzer's a backer and an acknowledged 'social engineer' with curious
nocturant habits. There are thousands
of people like him, who by day are system and network administrators, security analysts and start-up co-founders.
When night comes, they transform
into vampire wanna-bes, hedonists,
Coths, cross-dessers and sado-

masochists.

These are the self-proclaimed freedom fighters of cyberspace. They've even got a name for it: hactivism. And political parties and human rights groups are circling around to recruit hactivists into their many causes.

In July, for example, the Libertarian Party set up a table at the HOPE 2000 (Hackers on Planet Earth) conference. The San Francisco-based Electronic Frontier Foundation (EFF Collected donations. And members of civil-rights groups, including the Zaputistas, a Mexican rebel group, spoke up at one of two sessions on hactivism. But even without such civil-liberties

groups trying to organize them, hacrivins have been buy on their own. They have formed privacy-related soft wave companies like ZeroKoowdege Systems USA lize in Moretan They're developing among mouse, inexpensive e-mail and Web-bosting services e-mail may be some properties. In particular to the properties of particular to the properties of the class of the services of properties of the Dead Gov Communications of CCV www.cut deudow.com/hactivismo.hem.). In fact, Yetzer say be feels hace

tivism's pull so strongly that he makes a dramatic claim: "The Internet is the next Kent State, and we're the ones who are probably going to get shot."

#### Vietnam Marches to Cyberdisobedience

Like any social engineer. Yetzer exaggerates. Except for the four-year jail terms handed down to Kern'n Mitnick and Kevin Poulsen, sentencing for even criminal hacking in the past two years has been relatively light (mostly probation and fines) because of the suspects' young ages.

But the comparison to the psychedelic hippies of the '60s who spoke out against the Vietnam War may not be so far off the mark. Only this time, the hackers are Goths and hedonists. And they're using the Internet to rid the world of tyranary.

y. Continued on page 54 Welcome to the underground world of a group of computer hackers. They work in IT by day and fight for cyberfreedoms by night. They're also being called today's version of the '60's counterculture. Deborah Radcliff accepted their invitation to see what they're all about.



# Meet the 'Hactivist'

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# BUSINESS

The government tree to put electronic activism into the pep of cyberterrorism and crime with its Infower eulogies. But E-Hippies, clc. and others aren't criminals. The Internet just multiplies our wice," says Ricardo Dominguez, who edits a Zapatista revdutionary publication and operates the Electronic Disturbance Theater (owww.hipuz.cc/-rdom).

Dominguez has been working with the Zapatista rebels in Mexico sance 1994 to develop nonviolent directaction tools and spread information about conditions in Chiapas, a mountainous state in southern Mexico where the property of the condition of the condition of the conditions o

for the past five years the Zapatistas have clashed with the government. "I want to bring the net-hacker, netsctivist and net artist into a dialogue about what we can leave to the future for those without a voice and without

power — something the Zapatistas can teach us all," Dominguez says. Another group reaching out to hackers and technologists is the EFF, which last year successfully angued in the infamous Bernstein ruling, which stated that software code is protected as a

form of speech.

Robin Gross, the EFF's lead attorney
in the case of the Encito, Calif-based
Motion Picture Association of America (MPAA) vs. 2600 Magazine, an online hacker quarterly, says hackers are
naturals for political activism.

"Hackerd question conventional models. They don't just look at technology and say. This is how it works: They say. 'Hos is not in works: They say. 'How can I make it better?' Grous explains. 'They look at society that way too — their government, their schools or their social situation. They say,' I know how to make this better,' and they go for it."

In the MPAA case, staffers at Middle Island, N.Y.-based 2600 Enterprises Inc. were threatened with imprisonment if they didn't remove a link on the 2600 Web site to the code used to

In the Eyes of the Law

MAN POYMER, a 20-year IT voteron who overs Jerbon loc. on IT consulting firm in Cambridge, Mayor, says all softicult to cast manual judgment on hardwists. T don't think hardwen on consultary good or bed. What they're doing is missing sweeness and florating people to think about things. That's what activities do, "he

cides them?"
Right now, acceptable morals are determined by the letter of the law, so Jim Christy, a supervisory special age and counterintelligence coordinator a

tion-assurance program.
Oristy says the armitties don't have any problems with hardware, as long as they work within the last. But the desert beginning of which sites, which he litters to protestes breaking windows at the World Listed Consecution summer at the World Listed Consecution summer.

"Law east to proted innocent that parties. We those business owners in Seattle who were damaged monetarily." Ovinty explaint. "If the laws don't work, then they should be changed though the

al procees."

crack DVD encryption. Because the link was editorial content, it sets Yeszer off on another diatribe. "It's all about greed," Yetzer says,

tapping his claw-handled cane on the wooden floor at Click \* Drag. "But we have a fundamental right to watch our movies whatever way we want and share our music with who we want." The Libertarian Party also recruits hackers and technologists. At HOPE.

hackers and technologists. At HOPE, the party's New York State committee (www.cownow.com) handed out filers, signed up recruits and took a "sticker" poll of party affiliations. "The poll got hacked, but I'd say about half the stickers were vellow ---

about half the stickers were yellowfor libertarian, anarchist or independent. 'asys Bonnie Scott, who heads the libertarians' New York state committee under the hacker handle Rabbit According to Scott, many party members are programmers. 'We're trying to rally hackers around encryptrying to rally hackers around encryp-

trying to rany macters around encryption, privacy and freedom-of-communication planks," she explains, "Hackers can offer us... freedom, because the Internet routes around tyranny." But hackers have ways beyond the Internet to electronically spread their

message.
Take a young dude named Numeric
Overflow, for instance, who late one
night broke the lock to a lit-up roadside-construction sign and reprogrammed it to read. \*Hack Planet
Earth' in support of the 2000 Magazine staff. But then, he also says he
likes to use his reprogrammed garage.

door opener to pop open his neighbor's garage doors.

Sounding a lot like Yetzer, Numeric Numeric Justifies this in the pedantic hacker way. 'One of my firiend's mothers seem later and says, 'Oth. door liet that gary come over again.' like I'm some boodlium or something.' Numeric, 21, says. 'But itsn't it better that I showed them before someone eight did it and

#### stole their stuff?" Growing Un

This moral confusion is typical of the younger hacking crowd. But Stanton McCandish, advocacy director at the EFF, says most of the older hackers (28 years and up) have grown up. "I saw distillusionment in the mid-

1900s, as more bleeding-edge backers ended up poing to juil for cracking. That bummed out their whole theme, McCandish says. "But now they've learned some limits, and they can still operate within them."

Thut means the older backers do

develop some scruples. For example, McCandish recounts that the EFF Web state (www.eff.org) was a popular target of punk hackers back in the mid-90s, with hacks and deficements occurring weekly. Now, it's been six months since the last attack on the EFF's slst, he says. When the site did get hacked.

47

[Hackers] don't just look at technology and say, 'This is how it works.' They say, 'How can I

make it better?"

McCandish posted a message about it on 2600's bulletin board, and the "hackers who responded called that hacker a lamer," he says. Get a load of Yetzer's scruples. A Windows NT administrator by day,

Yerzer, 28, says he can't stand that his former employer, an East Coast-based Web-hosting firm, Bet to its customers. "My leader, the grand Brubaba, had this ethical dilemman," he says over the din of technometal music pulsing from Click + Drag's dance floor. "We had this three-hour power failure. When clients called in, I told them the truth-that we'd had a power failure. I got

demoted for that. My co-worker told them we got struck by lightning. He got a promotion." Yetzer later quit without leaving any logic bombo to Back Orifless on the network. "Would serve them right." he says. But Yetzer, the grown-up with scruples, adds, "Of course, if I did any-

thing like that, I'd never work again."
There are even more masure hackers ahead of Yetzer who have grown into heavy hitters in the information technology community. Hackers like Yobie Benjamin, 40, a partner at New York-based Ernst & Young International.

Infamous hackers Mudge, Weld and Hobbit are another example of maturity, having spun off a venture capitalbacked consulting services firm called @Stake Inc. in Cambridge, Mass., which now has five offices around the

McCandish says this growth process is no different than the hippies who spun off their surfboard and T-shirt shops into big businesses after they grew up.

"The process that turned the dopesmoking hippie of 1968 into the employed investor of 1965 is similarly going on here today," says McCandish. "I just hope that the hippie-to-yuppie distillusionment that took place histori cally doesn't happen to hackers, too."

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#### IME WAS, there weren't many entries in the technospeak dictionary. Basic, the now-obsolete programming language, was tossed around, as was builetin board

service, a precursor to the Internet. Then the '90's hit, and the World Wide Web caught on. Shorthy thereafter, FTP (short for file roungle protocol), HTML, URL and e-mail became part of the strandard levices. Desentually, e-commerce joined the frag with dor-come popping up right and lieft and e-retuilers edging in on some of the world's most successful retuil-basis.

word's most successful retail chains. Companies started devoting their time and money toward enterprise resource planning implementations that tied legacy systems to new customer relationship management programs.

surious paragreerer programs.

But if you think you've mastered technospeak, think again. It's a constantly evolving beast. Some terms are helpful ways of describing the uncharted territory of today's technology. Others are simply catchphrases with

ers are simply catchphrases with shorter shelf lives than the products, services or trends they describe. Here's a look at some of the new

tight labor market . . .

Business-to-employee: It's a tough

enough job to attract skilled talent these days, keeping your workers satis field is even more challenging. That's why conganites are paying more attention than ever to some of their most important customers — their employes. Sophisticated technology, comperishe wages and employee recognition strategies are now given as much weight in many IT shops as customer services.

▶ Business-process outsourcers (BPO): Yet another form of application service provider, BPOs offer IT services for automating specific business processes. BPOs can help companies cut the expense of entire departments so they can concentrate their energies on core

#### competencies. ▶ Collaborative or

anyone can do business with anyone else, a whole new level of cooperation needs to take place. As businesses that have traditionally been competitors start working together, they need to engage in collaborative commerce, which is essentially the lifeblood of on MASTERING THE NEW TECHNOSPEAK

A quick look at some of the new business-technology buzzwords you didn't know, and why you're glad you do now. By Melissa Solomon



line business exchanges. And as compunies work together, they need to determine how to facilitate the flow of information needed to make the partner-

ship work.

DNA: No, not the stuff used to get wrongfully convicted people off death

row. DNA refers to the indefinable characteristic that enecutives need to make a business fly. The hig question on the minds of venture capitalists looking to make a good investment is whether the CIO or CEO has the DNA to do the job.  Exclusic invoice presentment (EIP):
 Another sterm flowing through the husiness-to-business exchanges on the Web. EIP, simply put, is the same as electronic hill presentment and payment — or hilling and accepting payments online. The difference is that EIP is specifically for business-to-

► Flor. You know them: the people who spend hours glord to their computers viewing ads so they can rack up the "rewards." Flies are sucked into the Web by those clever marketing strategies that offer free points, coupons and

credit toward merchandise. be lettered application integration: One strategy for implementing collaborative-commerce practices is intermet application integration. This allows companies that partner in a supply chain to automate cross-enterprise business processes by linking their different software applications over the

Internet. It takes enterprise application integration to a whole new level. 

M. commerce: Now that you're starting to figure out the intricacies of

ing to figure out the intricacies of e-commerce, it's time to move on to new challenges. M-commerce, or m-business, refers to the next major revolution — mobile computing.

▶ Pressive computing: Ver, this term has been around for a while. But as companies move toward me-commerce, pervasive compouning is moving encountered to reality than ever before. Essentially, it means that computing will be every where and play a role in even the mour basic human task. Many consumers to do their grocery shopping and pay hills, we are grocery shopping and pay hills, and the present appeted of our levels as computers to a

come more portable and accessible.

I rade credits: Yet another businessto-business-specific term. Trade credits are a new form of online financing 
specifically geared toward business-tobusiness enchanges.

» Wice names enrelients: Sure, you can hite an application nervice provider to handle species provider to handle species provider to handle species. But a business become species the clock operations, employees need to be readed and sortium, anywhere. Voice nervice providers offer a single phone number that stell sites someone's voice, fax, cell and pagier numbers. But don't call farm VSPs, because thus

refers to ...

Vertical service providers (VSP):
These are industry-specific applicati
service providers. VSPs offer IT ser-

servace providers. VNN one? I is services with special expertise in, say, the
automotive or health care industry.

Writes Bistrabe Language (WML): As
wireless technology gains speed, WML
is quickly replacing the standard Internet programming language. HTML
WML allows users to retrieve and
display files for Wireless Application
Protocol-based phones. 9

VER NOTICE how some executives flourish when they're suddenly faced with a crisis situation, while oth ers seem to get that deer-in-the-head-

lights look about them? In an admittedly unscientific pe sonality test, Computerworld posed six hypothetical management challenges to two information technology leaders who have climbed to the top ranks at Fortune 200 companies: Bruce Freeman. CIO at Fort Worth, Texas-based igton Northern Santa Fe Corp. who has a business buckground, and Steve Finnerty, CIO at Northfield, Ill.based Kraft Foods Inc. (the North American food business of Philip Morris Cos.), who has risen through

the technology ranks. You have a new CEO; what are your too

nest First off, I'd want to find out their arenda, for the short term and the long term. Then, I'd develop a customized value proposition that would match up against his or her priorities pretty quickly. I'd use that to sell myself and my department. [The new CEO] probably wants to do som

thing that shows early on that he's the right person for the position. There's no better enabler than IT to help do

m Fin eric First, you want to establish a personal relationship with that person. I'd start out with a discussion of what [he's] trying to accomplish. In that discussion, you get to know that person and their style and establish rapport. But to sustain that rapport you have to deliver results. You need to determine what his or ber priorities are, then go back and develop and municate your plan to achieve

those objectives and those priorities.

de are deserting you like rats from a sinking ship. You get the feeling it's more than just the normal turnover. What do you do? Freemar: You've not to pretty quickly stop the bleeding and assess what's going on. I'd get into the department and ask them point-blank what is happening and what do we need to do to fix it. My attrition rate is not that birth - 8% or 9% - but I'm still losing people I didn't think I would lose. The second thing is to figure out what you can change. It's not all [about] the pay. It's

challenge, opportunity, a chance for

growth, culture, leadership and money.

Because we're part of a railroad from

panyl, I know I have challenges in pay

It's not all [about] the pay, it's challenge. opportunity. a chance for growth, culture, leadership

and money. BRUCE FREEMAN, CIO. BURLINGTON HORTHERN SANTA FE CORP.

structure. We have a multitiered pay structure with bonuses and stock options. But you talk to 23-year-olds, and they don't care about stock options. They want to have that new car

right now Finnerty: First, listen to people. I'd do one-on-ones across the organization and in small groups and find out th barriers to their being successful and also what are we doing right. I'd an swer the concerns very quickly with a plan: I heard you; here's what we're planning to do. You also need to develop and communicate the vision of you have to deliver results. where we're going so people have a sense of purpose.

fou're an imp ners hate, mistrust and ne of the un CIO and his si nop. How do you tu is around and establish a good working

at First, he humble. Don't go in with all the answers. Go in and be a good listener. Find out why they hate IT what IT didn't do for them Did IT not give them a PC or not follow their directions? Find out the issues to change the relationship. Then I'd try to adapt and build a plan they'd buy into as a good opportunity to make them Another point is that you got proba-

bly just as big an issue behind the nes because [the IT] staff has the same feelings and concerns about what is this guy going to do differe You've also got to sell yourself to your department and buffer them from being best up as they were previously. ■ Finnerty: I would have one-on-ones with leaders of the organization. I'd listen very intently to their issues and get a sense of their priorities. . . You need to communicate a lot in terms of managing expectations about what's possible. You can't just talk a good game;

IT project that's six months late and out of control. The CEO is breathing down your neck. A competitor has just gone live wi a similar project. How do you get the ct back on track

Freeman: First thing is you've got to listen. You've got to identify the issues quick, then demonstrate a change of direction and correction. If I walked into a project like that and started talking to the programmers, I'd get strong opinions about what the problems are - things like not enough people or working too many hours. You're not looking to have a witch hunt or make a scapegoat, but you have to demonstrate to your staff and your custom that you're going to change the situation.... If you do that quickly, you

who have been banging their beads against the wall. Finnerty: I have a leadership issue cither from the IS or the business process side. Do I need to make a change? Then I would focus on the critical: Cut back on deliverables and get the 20% [of function that delivers the 80% lof the benefits). I'd also apply Project Managemeot 10k a plan, resources, know your deliverables and track along.

Two IT leaders describe how they would tackle six hypothetical management challenges. By Julia King and Kathleen Melymuka build a level of support with people

#### year. What are your s

Words you pain them?

If rement The first thing I'd dn is try to get myself last nn the agenda. Before the meeting. Td meet with all in the suber department heads to find out their three things. I'd want nu understand their initiatives, then bring I'l in as a means nf accomplishing their goals. I've never been in a situation where sweether denous men had said.

goals. I've never been in a situation where another department head with an idea to grow revenue ar cut costs hasn't required technalogy. In these situations, I've sometimes gotten added funding because if annather department head's idea. As an absolute worst case, I'd rank and printritize projects and reduce head count.

Flowerfy, I think the first thing is you need to accept the reality in the situation. So I'd do that, put a business has an and think from a technically and business perspective. I'd get a sense of have long this is going to last. If there's a fundamental lang-term problem, I'd downturn in the market. If it's remporary, I'd delay some things, I'll it's nemporary, I'd delay some things, Just say, This is an apportunity to challenge and paradigms and come up with some creative land.

I'd be quick to partner with the business-process people to be sure we were in alignment. They might want to work creatively to surface some busi-

ness-process ideas.
I'd discuss this all with the CEO

ahead of time if I could and give him or her aptions and recommendations. Then you need to come in realizing that things may move because there will be new discussinn and ideas. So you need to know where you can move [compromise] and where you can't.

You're thinking about taking early retirement but then along cornes an offer you just can't refuse. What's that offer, and why can't you yous it up?

B Frommer: Two things would keep me from retirement. I'd be interested in taking an a leadership role in a start-up company, which wouldn't necessarily have to be a dot-com. The CIO-for-hire role in a turnaround situation would also be interesting.

Finnerty: I view opportunities by saying, 'What's my purpose in life? Why am I here? What are the values and principles I fallow from a life perspective? I use a river analogy: The Mississippi has a purpose - to get to the Gulf of Mexico. The vision is the Gulf; the principles and values are the banks of the river. One of the princi-ples, clearly, is life balance. When you go outside the banks, you flood the farmland. When you're in the flnw, and rtunity comes along, you say. How does that fit to my life purpose what I'm trying to do or become? Intuitively, it's obvious whether it's a right thing to do.



B BNUCF REEMAN, 20, is vice president and CR0 at Burlington Northern Sents Fe in Fort Worth, Texas. His provious positions range from project manager to vice president of applications development, a post in which he was responsible for all business and technology planning acrounding the merger of the Burlinson Northern and Senta Fe nailmost.



III STEVE FRINGERTY, GI, is vice president and COO at Eyelf Freeds in Mortifield, III. Financity, who previously served on Kraff's chief text coding officer, was formedly vice president of information systems and apply chain menagement at J. M. Huber Corp., in Edison, N.J., and director of information systems at Johnson Controls Inc. in Millusables

ECHNOLOGY TITANS are making headlines with the fabulous sums they're donating to charity. Bill and Melinda Gates' foundation has

Bill and Melinda Gates' foundation has contributed \$22 hillion to international children's health agencies.

Oracle Chairman Larry Ellison has promised \$100 million to help computerize American schoolrooms. Patrick J. McGowern, founder and chairman of International Data Group, the owner of Computerworld, was cited in Time magazine as the several most generous philasthropist in the U.S. with dona-

tions and pledges of \$350 million.
While most information technology professionals don't share their wast wealth, many share the megadonors' generosity of spirit and give what they can to make the world a better place. Meet four IT professionals whose neighborthoods are richer because they do not their time and talent.

. DON SUNDERLAND

founding families.

Edison Schools Inc.

Now York

Every other Priday for several years, Don Sunderland
would leave the office a little early— with his boos's
blessings— and harry uptown with his guitar. He
wars! taudificating for Brittery Spears' band. He was
leading sing-alongs at the Manhattan School for Children, an alternative public school on the Upper West
Side. He and his wife, Ruth, are among the school's



"We loved the cultural and ethnic diversity of the West Side, but we couldn't help but note that the preschool our children were in looked as if we were in Westchester," says Sunderland, referring to the mostly suburban county just north of New York.

Determined to create a "true neighborhood school" with a mix of hlack, Hispanic and white childrea, a group of parents worked with the New York (lay public school system to launch the Manhattan School for Children's kindergarten and first grade in 1992. The school has since expanded up to the eight grade. Located on West 93rd Street, it's now known as Public School 333.

Sommetry the head of technology as a Wall Street firm, Sunderland could have afforded to send his children to private school. He says he didn't want to. "I believe that public education is the American dream, the dream of immigrants that their children will receive the rights of passage to better lives through education. Anything that takes money out of public education and redirects in the private deucation has class distinction smoothed with it and promittee that the properties of the private deucation.

That passion led Sunderland to accept his current position as CIO of Edison Schools. Founded in 1992 as The Edison Project, Edison Schools is the country's leading private manager of public schools. Many Continued on page 60

✓ WILLIAM SCHWAB, president of Norwalk Comp
College, balls to IT Advisory Council

# IT'S GOOD CITIZENS

Career payoffs have been very good to the majority of technologists in recent years. For many, that has fueled a desire to put their skills and experiences to work where they can really do some good – their own communities. By Jill Vitiello



eBusiness

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National Schools, United Statements, Clarity the National Research, Tops, published statements on Tradements of Stated Releaseds, "What do you won't do national to Sec." It is present and of Research, 18 cylin research.

# BUSINESSCARFERS

of the schools Edison manages were underp ing before the company stepped in to rebuild them around a strong academic program, applied technology and an emphasis on parental involvement.

Edison has implemented its school design in more than 80 public and charter schools, which it operates under management contracts with local school dis-tricts and charter school boards. Each Edison school consists of small schools within schools, called "academies." The concept is similar to the one used

at the Manhattan School for Children. In Edison schools, technology is integrated into the curriculum. Every student, teacher, principal and administrator has easy access to classroom comput ers, video cameras, televisions and more. Every fami ly with a student in the third grade or higher receives technology to use at home, and every teacher receives his own laptop computer.

In his involvement as a founding family member, past treasurer and parent of kids at the Manhattan School for Children, Sunderland says, "I learned the battles of opening schools and dealing with public education in an inner-city setting, and that very much applies to what we encounter at Edison."

#### \* STEPHEN RAYE

GeneralCologne Life Re of America

Stamford, Conn Stephen Raye knows firsthand that "Stamford is not all 4-acre zoning." In a region of the country that most Americans view as wealthy. Raye has found opportunities to support those in the com ust work two jobs to make ends meet

Raye is a founding board member of the Mutual Housing Association of Southwest Connecticut in Stamford, a nonprofit organization created to provide affordable housing for people who are willing to mit themselves to ongoing community improvement tasks such as making repairs on buildings or cleaning up trash. As part of his involvement, Rave has walked the nightly crime patrol in the neighbor-hoods he helped establish.

"As a CIO, the skills you need are communication, relationship management and the ability to listen, says Raye. "That was what was needed at the Mutual Housing Association. We had a list of people who wanted housing that was longer than the list of the housing available. We created policies and procedures that would qualify people for the housing on an equitable basis.

In addition, Raye has served for more than two years on the Norwalk, Conn.-based Norwalk Comm nity College (NCC) Information Technology Advisory Council. The council advises the two-year college on its curriculum, infrastructure and industry trends.
"Norwalk Community College is very aggressive. in its mission of providing a world-class facility to educate and train IT professionals," says Rave. He says he appreciates the chance to serve on the IT Advisory Council, where he can help "fine-tune the IT ms, which provide us with talented IT interns. and full-time employees."

When the coilege was planning a new building.
Raye invited those in charge of the project to visit his company and examine its IT infrastructure so they could get a firsthand look at industry best practices. Raye also hired one of NCC's nontraditional students - a woman who had previously earned a muth degree and was returning to the workplace and learn-

ing computer skills at NCC after raising her children The members of the IT Advisory Council are absolutely the best group of people I've ever worked

with," says William Schwab, president of NCC "They keep us on task and give us such good advice."

#### **EWILLIAM WERSTER**

Vice president, information management - cos Bristol-Myers Squibb Co.

Stamford, Conn. Another member of NCC's IT Advisory Council is William Webster, who has served slightly less than a

#### **Getting Started**

you get out of the m n and get erio the com unity, you ment the mos dible seccie in your life " says Dee Synde

As a volunteer at the Warrhal enderland didn't install or supp es. His tires beckground didn't m the "Macretory constitution" of the education

CO of Edwar Schools

nd says. The idea of com ns is divisive. I got over arguing about it ye ago. We put up the incheology that works for the job we have to do. "Edison Schools recently struck a deal with ISM to roll out deal

rates you to do more," she seen

EP THREE: Olive what you can't finit you have to give your volun same number of hours you give your cereer. Even a all number of volunteer hours can make a big differto the community or nangrofit scac nya cit," saya Steve Raya, CIO at Gener

#### Smart Companies Support Volunteerism

ter Another CO outrolling a city od. Nos for them and nice for the peop try help, but what's in it for their companies?

Plants, according to a survey of more than 2,700

LS companies conducted last year by the Points of light Foundation and The Conference Board. U.S. comp

94% of executives responding to the survey said they agree that voluntaerism improves a company's

year. Bristol-Myers Squibb has hired NCC students for internship programs. "Community colleges address a portion of the population that aren't addressed by state four-year colleges and private universities," he says. "I feel good about belping young people get an education that immediately can be used in their life's work."

To that end, Webster is also working to establish a chapter of the Chicago-based Society of Information ment (SIM) in the area of Westchester County, N.Y., and Pairfield County, Conn. The SIM chapt founders will hold organizational meetings through this year, with the intention of launching the first general session in January.

"SIM helps groom the next level of executives who will take over our functions," Webster says.

#### BOING DOTENTA

Manager of technical infrastructure Lincoln Life and Annuity Company of New York Syracuse, N.Y.

Gina Potenza is an official wish-granter. As a special-ly trained member of the central New York chapter of the Phoenix-based Make-A-Wish Foundation of America, Potenza is authorized to fulfill the desires of critically ill children in her community. The whole point is to focus the family's attention on having fun er instead of on the disease that threatens the child's life, Potenza says.

"The first wish I granted was for a little girl with tupus who loves Rosie O'Donnell and wanted to meet her," says Potenza

Not only did Potenza make the you ome true, but she also embellished it. Potenza arranged for the girl's entire family to spend a week in New York. A limousine took them to the airport, and the kids received backpacks stuffed with goodies and nes to keep them occupied during the flight and eras and notebooks to record their adventure. They met the popular comedian and talk show

host backstage and were members of the audience through two tapings of her TV show. The family vis ited tourist spots such as the Empire State Building and the Statue of Liberty. The entire wish fulfillment was paid for by the foundation. "There is no mone tary limit on a wish, and the average wish is \$5,000. since we enhance them so much," says Potenza, who also serves on the chapter's fund-raising committee Two years ago, Potenza decided to put feet to her desire to give back to her community. She asked the advice of a senior manager at Lincoln Life and Annu ity who was known for her volunteerism. The men tor helped Potenza identify organizations in the com-

munity that were involved in helping children. "When you contact an organization to offer your services as a tech-support person — or in any other capacity — people will be more than happy to accept your offer of help," says Potenza, One of her first yolunteer activities was to provide networking advice to a nonprofit association.

tenza's love of kids eventually led her to the Make-A-Wish Foundation and to her community's Junior Achievement program, where she teaches second-graders about their community. Her emplo er gives her a couple of hours out of the office for the five-week course she teaches once a year.

"I get a lot of support from Lincoln," says Potenza. vice chairwoman of the company's charitable-giving committee, which provides grants to Syracuse non-profit organizations involved with the arts, education and human services.

Vitielly is a freelance writer in East Brunewick, N.I.



# DIGEX

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# Capital Assets

of understanding what capital assets are and how they're applicamizatioo cao be summed up in four words: the

Internal Revenue Service. How you allocate your information technology budget can depend heavily on how an asset is taxed. And determining whether to buy or lease an asset often depends on how it will be treated for tax purposes.

'An asset that does not have a life of more than one year can be treated as an expense and deducted immediately from company's income," says Howard K. Warshaw, a partner at New York-based accounting firm Leipziger & Breskin LLP. These items might include office supplies - the point here is that you can immediately expense these items.

Another way to look at a capital asset: "It is anything not held for sale in the husiness," says Joseph Clare, a partner at San Francisco accounting firm Clare, Chapman, Storey & Cas-

## Degreciating Disk Drives

Capital assets, such as a mainframe computer or a \$10 million storage silo, are typically depreciated over several years instead of expensed as an up-front, one-time charge. Using various depreciation methods, companies can write off the cost of the asset following a schedule produced by the IRS.

For example, the IRS says computers can be depreciated over five years, whereas software purchased separately from the computer can be written off over a three-year period. If you can't separate the software from the hardware, then you must select the five-year schedule, according

to IRS regulations. Rules exist for depreciating fferent kinds of assets for tax irposes, says Warshaw. Most unts will use the Modified Accelerated Cost RecovDEFINITION

Sometimes known as fixed assets. capital assets generally are equipment or other items owned by an organization that have a useful life of more than one year. Capital assets include machinery, computer hardware and office furni-



Everyone wants to manage big expenditures. to smooth out the big capital outlays to avoid big blips

ery System, which tells you how to depreciate different pieces of equipment, as some have longer lives than others.

Typically, computers are depreciated using what's known as the "double-declining balance" over five years. This is an accelerated method of depreciation that "allows you to write off a higher percentage of the cost in the beginning,"

notes Warshaw. Being able to write off a lareer portion of an asset earlier in its life can have several effects: It can reduce the amount of income on which the company must pay tax. In addition, by writing off an asset early, your

balance sheet isn't full of assets that aren't generating cash flow. But what if you decide you want to get rid of the computers before the five

years are up? "If you paid \$1,000 for the machine, and you already deprociated \$600 of it after two years and then sold it for \$400. you would be able to recognize a loss of \$600 against your in-

come," explains Warshaw. In this case, you get the write-off against income utine depreciation and you get to deduct the loss of \$600 against ordinary income, thereby lowering the amount that's taxed. Trying to define the exact

tle tricky if your company is selling capital assets and claiming a loss

"Some people look to lease certain assets," says Warshaw. "When [you] are signing a lease for tax purposes, the IRS has certain rules as to whether you can expense the lease payment each month

Of course, the IRS is interested in knowing whether your company is using a lease to purchase something in order to get the interest deduction. One way to make this clear is to have a portion of the contract state that your business can purchase the equipme for fair market price at the end

Attempting to buy the emigment for the nominal sum of \$1 won't fly with the IRS. The apency will most likely claim that you purchased the equipment and must depreciate its value rather than deduct the

## zimizing Cash Flows

Another reason to conside leasing equipment is the Hoh Grail of cash flow: "Most busioesspeople, as well as Wall Street analysts, look for a steady cash outflow from a capital asset," says Clare. Everyone wants to manage

big expenditures, to smooth out the big capital outlays to avoid big blips in cash flow," Clare adds. "From an eco ic basis, it could be better for the company. For an IT manager, his or her job is to get purchases or leases organized in such as way so that capital expenses don't bump up all at

once." Warshaw poiots out that some companies may want to show investors a lot of income. which would favor depreciation of assets over time, rather than expensing them all at once. "If, on the other hand, the company is making lots of money and wants to maximize its deductions up front, it might look to expense the equipment payments each month. It really depends on your situation," he says. That's one reason why it's

worth doing a projection in December to see if your orgaoization is likely to owe the government a sizable amount in taxes. If so, your company might want to use its cash to purchase office supplies, new stationery or other items that won't last a year so it can receive the immediate deduc-

"Maybe the write-off is more important this year than the depreciation," says Warshaw. "And your balance sheet will look different, too, the more you capitalize your asset. For technology companies, that might mean capitalizing the interest expense related to the

tion, says Warshaw.

cost of a project." For example, a company may decide to purchase a large computer or other piece of equipment. By leasing and claiming the deduction of lease payments, it would have a steady amount to deduct from income, smoothing out the

Theo again, depreciation could produce significant changes io deductions from income each year, making cash management more difficult. The choice comes down to a pay-now vs. pay-later scenario. "For the IRS, a business would want to write off things quickly, getting the deduction,

company's cash flow

while for shareholders, you would want to show a longer life for your assets," says Clare.



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IOE AUER/DRIVING THE DEAL

# Good note-taking can go a long way

EGOTIATION AGENDAS and meeting minutes prepared by your team are important. Make that very important. Your team should develop a formal agenda for every negotiating session with a potential supplier.

The benefits are many: You'll prepare better: you'll be able to control the meeting and the vendor more easily: you'll ensure that the points you want to address are addressed - and in the right order (some points become more or less important if related issues are won or lost); and you'll be able to use your team members more efficiently (group topics so that team members who are specialists in one or two need to be there only when their topics are dis-

cussed). Why should you run vendor meetings? Because you've got what they want

- the money. Failure to record the results of negotiations in a clear and concise manner can lead to disagreement bewas actually discussed - or agreed to. The confusion will lead to protracted negotiations - and perhaps mistrust - between the parties. The cure is simple: Make sure someone on your ream takes complete and accurate

It's also useful for scribes to be in on your planned tactics, objectives and team roles. Actually, it's interest-

ing how much the note-taker can control the negotiating session itself He can request clarifications during a strong bargaining initiative by the other side (to slow its momentum), recall previous points that support your objectives and control the tempo of the interaction. In

short, controlling the docuentation of negotiation information helps keep the vendor in check.

If the one of the members of the negotiating team is assigned the scribe's role as an ancillary task, the results may be unfortunate for two

First, the quality of the minutes may suffer because the scribe is more focused on another role in the neco-

Second, the scribe's performance as a member of the negotiating team may suffer from a lack of focus Having a full-time scribe

emphasizes that taking minutes is important and will be done thoroughly. The scribe should attend every negotiating session to produce and document

meaningful results. To get things started, before or when the negotiating session begins, provide the potential vendors with a ne-

The survey of 300 adults, cor ducted over the Internet Sept. 30 by InsightExpress LLC in Green-wich, Coon., showed that 67% die red with legislation, such as an ce prepend in Chicago ba

## Consortium Explains ASP Contract Basics

try Connortium's Web site, www.

gotistions protocol, which states the following points: ■ The customer will provide a meeting agenda and a dedicated scribe.

 Either party may request that the scribe read the notes regarding a particular negotiating point.

 Copies of the minutes will he provided to both parties. Discrenancies

will be reconciled either out side of formal negotiating sessions

or at the next negotiating session. The potential vendor may propose issues to be included in the anenda for the

next meeting. Notice the control on this point The agenda will determine the sequence of

the negotiation You can have the scribe prepare a minutes template that lists each negotiation point from the agenda. Subheadings under each point

can include "our position, "vendor's position," "discussion comments" and "status" - such as resolution of the issue. Using this format, the minutes provide a clear trail

to understanding how the current status was reached lield, Mass,-based group. The con sortium said it plans to release a

ch more compreh et to help ASPs di

## Stamps.com Experiences Expdus

After each negotiating session, the minutes can be used to update team members who weren't in attendance, update or modify the team's negotiation plan and help develop the next session's negotiating agenda. The minutes are also very useful in preparing the final

> capture specific contract language as it was agreed to during the perotiations Save all of your notes, since having the negotiation notes along with the contract can be very important later in the event of a dispute You may want to eventually establish intent, the basis for an

agreement or

how you were

contract if they

induced into the agreement could improve greatly on preparing for controlling and documenting each negotiating session. The meetine accenda and minutes are powerful tools

So get better at determining what's going to happen. controlling what happens and documenting what happens - and you'll see better

CFO John LaValle and Co ler Candelario Andalon are is the company to pursue other in ing to a sta

sank to \$2.43 in early

# Authoria Mames CTO

tween the parties over what Galileo Reports

no marnatonal inc. in Reser et, ill., lest wook said its third

Decline in Bookings

wever Gailleo added that its ngs for the third quarter show \$385 million, up 5% from the sa period last year. The final reso are due to be announced Oct. 23. files is trying to break into the

online travel market through Trip.com, a ticketing Web site foes travelers that it Cell Phone Users

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## TECHNOLOGY

#### DRIVING DSL

To keep its 3,700 plant employees shreast of production targets, quality regulations and line stoppages, BMW last month hegan piloting a video system powered by hroadband DSL Net connections. • 70

VOICE OF CHANGE For years, vendors have been trying to convince users that sending voice calls over data circuits makes sense. One inter-

been trying to convince users that sending voice calls over data circuits makes sense. One international provider has become a believer: Cahle & Wireless will migrate voice telephone customers to voice over IP during the next three years. • 72

#### SECURITY JOURNAL

When executive laptops disappear, concerns about the loss of sensitive data drive Jude toconsider encryption and tracking devices. But a simple desktop lock may be the best answer. > 74

#### HANDS ON

Reviews editor Russell Kay offers a roundup of small-format, full-featured laptops. He finds several interesting machines — and concludes that newer is definitely better. **P** 78

#### **FUTURE WATCH**

As we look beyond the Silicon Age, quantum computing offers speeds that until now were unimagined, and it could be virtually uncrackable as well. So far, the largest quantum computer is the size of a molecule, hut researchers say they will be sitting on desktops in a few decades, \$78

#### ASP ANXIETY When it comes to choosing an applica-

choosing an application service provider, knowing what questions to ask up front can spell the difference between a dream relationship and a nightmarish one. A few cautionary tales may help you shape wour inquiries, s 80

#### QUICKSTUDY

Need to send data to a lot of people? IP multicasting makes this efficient and doesn't hog handwidth. It's a method of delivering a single packet, sent only once by the source host, to multiple destination hosts that may be connected to scattered sulnets, a 80

#### EMERGING COMPANIES ViaFone's wireles

development tools and services promise to make short work of huilding unplugged e-commerce applications on the Web. The start-up offers both hosted services and a roll-your-own develop

#### MARKETS

With Internet development skyrocketing and South American trade flourishing, the demand for IT workers is hitting an all-time high on Florida's southern shores. 90



### ANY DATA YOU DESIRE

FOR YEARS, IT MANAGERS have searched for ways to give users any information they want, whenever they want

it, from any database. With data cataloging tools, that dream is nearing fruition. Such tools function like a data warehouse, with a fraction of the development effort and without the overhead.

82

## **BMW Pilots DSL** Video in Plant

Luxury vehicle maker puts broadband video services on the factory floor

VEN IN A STATE-ofthe-art manufactur-

ing plant, things break down, procrawl, and line workers

oder what's up. Those are a few of the reasons BMW Manufacturing Corp. installed a high-speed Digital Subscriber Line (DSL) network to provide video

services at its Greer, S.C., facility add to attention and quality output," said Bobby Hitt, a BMW Manufac-

turing spokesman, "We wanted to add to the con nication process and make sure that everyone knows

To keep its 3,700 plant employees abreast of production targets, quality regulations and line stoppages, BMW Manu-facturing last month began piloting an in-plant video sys- structure, according to Hitt,

tem. The pilot includes 24 monitors set up in the assembly department and plant cafeteria powered by broadband DSL Internet connections that run over the plant's existing

But the DSL system wasn't BMW Manufacturing's first choice. The exclusive production facility of Munich-based Bayerische Motoren Werke AG's Z3 and X5 Sports Activity Vehicles originally wanted to install a fiber-optic infrastream data transmissions of as

due to "galloping" costs "The cost of routine cable into our existing wire trays alone exceeded the budget by over \$100,000," Hitt explained. "And that cost would have been exacerbated further be-

cause in our production envi-

installation cannot be done during work hours." Eric Rasmussen, a senior analyst at Tele-Choice Inc. in Denver, said video over the Internet has been problematic because data packets

don't always arrive in a timely fashion due to high traffic. But closedcampus environments can avoid those latency problems, "Unlike (the) Internet, which does not have quality controls and relies

on best-effort service, in a closed environment like a manufacturing plant, you can prioritize traffic. Raumusen The DSL system, which cost several hundred thousand dollars to install, offers downoped the pilot system with communications software from Target Vision Inc. in Pittsford, NY., and DSL management equipment from mPhase Technologies Inc. in Norwalk, Conn Andy McCormick, an analyst at Aberdeen Group Inc. in

pstream capacity of 972K bits. BMW Manufacturing devel-Boston, said BMW Manufacturing will also be one of a few companies testing videocasts over DSL. "It's something that companies want to do, but so far, it's been reserved for large businesses with dedicated fiber connections or private cable TV into the business," McCormick said.

#### Server Aids Web on Run

ronment, unlike a house, the Translator supports mobile devices

> Chicago-based Curious Networks Inc.'s middleware, announced this month, aims to make it easier to tap into the Web from PCs and mobile devices and to query databases,

The firm's server called a multichannel access platform, acts as a translator between back-end data systems and applications that run on mobile devices, such as mobile phones and Palm Inc.'s handhelds, as well as on PCs. It won't ship

ditional changes to the original application The Yankee until March, but Curious Net ket research works plans to launch a Web site to give developers free access to the software next 21.2 million

The Java-based server is built using Multichannel Access Extensible Markup Language (MAXML), a technology developed by Curious Networks that translates queries from various mobile devices into the appropriate standardsbased code to extrapolate data from a back-end system. The server also includes a set of interfaces for different device

For example, using the MAXML platform, a user could download a corporate Web directory with a Palm and search for a particular individual's name and phone number. If the server was configured to support voice activated phones, the user could also obtain that same data from a phone without ad

Group, a marfirm in Boston. estimates that users in the U.S.

will access data from a mobile device by year's

Designing

one application that's suitable for a bevy of device formats is a challenge for developers. said lack Gold, an analyst at Meta Group Inc. in Stamford, Conn. Different screen sizes and data types make transforming information approprintely to different devices very difficult. "For most corporations, it's best to limit your device choices," said

In the short term, writing applications for devices will remain "tactical, rather than strategic" development projects, be said

Curious Networks plans to offer its technology as a hosted service and as a stand-alone server. Pricing has yet to be determined 9





AT 178 MPPS WHO CARES ABOUT AERODYNAMICST

#### Big Telecom Provider Turns to Voice Over IP

HILE vendors
have been
tousing the
benefits of
phone systems that send voice over data
networks using internet Protocol instead of over traditional
telephone lines, none of the
big telecommunications companies have embraced voice
over IP for widespread use.

pannes naive embraced voice over IP for widespread use. Many of them, analysts say, are worried about shelling out more money to deploy and maintain IP-based systems that could cannibalize voice revemue by treating voice calls like

any other type of data. sidiary of Seattle-But that changed two weeks borne Freight Corp.

ago when Cable & Wireless PLC in London announced that during the next three years, it plans to migrate all of its European and North American business voice customers from traditional circuit-

is European and North American business voice customers from traditional circuitswitched telephone services to voice over IP. "If we go down that road [run voice over an IP network].

to voice over IP.

"If we go down that road [run voice over an IP network]. I'm going to have to be really convinced that I'll have the bandwidth I need for both data and voice," said Kell Achenbach, director of information services at Sky Courier, a Sterling, Va.-haued next-flight-out delivery service and subsidiary of Settle-based Ale-sidiary of Settle-based Ale-

Achenbach said his company uses Cable & Wireless' traditional voice services for customer and dispatcher tollfree phone calls.

#### \$1.4 Billion Deal

Customer concerns such as Achenhoch's may be why Cable & Wireless elected to have Brampton, Ontario-based Nortel Networks Corp build, implement and manage its network and voice over IP system, said Eric Goodness, an analyst at Gartner/Dataquest, a division of Stamford, Conn.-based Gartner Group Inc. Cable & Wireless officials said their

sion of Stamford, Conn.-based
Gartner Group Inc. Cable &
Wireless officials said their
company will pay Nortel \$1.4
billion over the next 10 years.

Cable & Wireless said voice over IP will be rolled out to its customers in Europe and North America first and eventually to Asia/Pacific customers. The company will guarantee voice-over-IP service levels equal to those of standard switched telephone services. Cable & Wireless

officials said. In the new Cable & Wireless network, voice data packets will share bandwidth with other types of data, a company spokesman said.

In some instances, according to experts, voice-over-IP technology can cause delay, echo signal quality as packets that make up telephone conversa-

tions compete with other network traffic.

One way to get around the problem is to give voice traffic higher priority than other data, said Elizabeth Asher, an analyst at Meta Group Inc., also in

Stamford, Conn. But on networks like Sky Courier's, other types of data are just as important as voice data.

"ICable & Wireless and Nortell will probably overprovision the hell out of the network initially. There is no congestion when there's plenty of bandwidth," Asher said. >

45

I'm going to have to be really convinced that I'll have the bandwidth I need for ... data and voice.

KELL ACHENBACH. SKY COUNSER



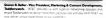
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### Laptop Security Turns On 65-Cent Solution

High-tech measures give way to simple locks

ASHERS — those little circular pieces of metal with a hole in the middle designed to help bolts grip a ace without damaging it - have g to do with IT security, right? Well, I hope they do, because I just

persuaded my company to buy 1,000 of We have a fair number of laptops sprinkled around company, mostly among senior managers and salespeople, and every so often, one of them goes missing. The cost of replac ing the hardware is a relatively minor problem, but the data on the laptops is mother thing entirely Our data may not be data on the laptops at MI6, agency, but it's still quite valuable to certain people We're investigating lap

top-encryption products at meantime, we've been trying to find a e-mail to the help desk, which respondway to physically protect the laptops to make them slightly less vulnerable to loss or theft in the first place.

#### Protection Racket

. The first thing to do was to buy security cables. These are simple things wrap the cable around the leg of your desk, then secure one end to your laptop using the lock provided. Of course, nothing is quite this simple in real life, and we've already had to deal with lost keys and reluctant staff. The trickiest problem we've faced with this involves

our "deluxe" desks. These desks, used by senior ma ers and some of the salespeople. don't have exposed legs, so there's owhere to attach the security cables. This problem went round and round for a while until it reached som with enough common sense to solve it unusually, a very senior mana in one corner, since everybody in the company uses a computer of some sort.

The simple solution was to create a metal ring with a diameter larger than that of the cable hole. You strack the cocurity cable to your laptop, pass the cable through the cable bole, then attach it to the ring, which can't pass through

the bale. Simple, n'est-ce pas Unfortunately, it's taken me about three mooths to get this simple solution

devices. They could rush the job out into practice. We spoke to our facilthrough with a brief two-week lead time and charge us no more than \$6.50 ities team, explained the problem and our suggested solution and asked them to sort it out for us. One member of the faably not the simplest method and concilities team e-mailed back tacted my local hardware store. Three explaining that what we incb washers cost about 65 cents each really needed were securiand do exactly the same inh.

ty cables for the Instons. and he helpfully gave us contact details for a supplier. I explained that we Security already had cables but needed a way of attachine them to deluxe desks. The facilities person eventually understood the problem and asked os to call the facilities belp desk He even forwarded his

ed with a simple answer in a matter of days. The suggestion? "Buy a laptop se-

We explained the situation calmly and nationaly to the belo deek. In survey spect, the calm patience may have been a mistake, because I'm reasonably sure

that a short bout of had-tempered shouting would probably have got the whole situation resolved much more quickly

Once they understood the problem the help desk staffers farmed the job out to the design team. But the design ers didn't onderstand, so we explained Two days later, I arrived at my desk

to find a security cable wrapped round the exposed leg of my (standard-issue) desk and a quizzical e-mail from facilities wondering what the problem was. They failed to understand the problem

over the phone and said they would come by my desk and talk it through face to face. The commonsensical senior managTHISWEEK'SGLOSSARY

ed on objects, provides a unique Tinperprint" that works in a way similar to ed by a unique code

led in the lique, which the com y stores in a central database. The

authy Products Inc 's Web site he

#### Another, slightly more technological mechanism we've used for laptops is the Indsol Tracer System from Smart-Water Europe Ltd. in Newport, England. It uses Smart Water, a poncond

enough to have a deluxe desk, neathy

took over the conversation before I lost my temper; he asked the facilities team

to try the same trick on his deak. The fa-

cilities team eventually conceded the

point, understood the whole nature of

the problem and resolved to go away

They came back 10 days later having

That was when I finally decided that

contacting our facilities team was prob

found a supplier that would create cus-

tom laptop-security cable-anchoring

and solve it for us.

The High-Tech Approach

tive "liquid forensic coding system" that is designed to be different for each SmartWater user customer and to be uniquely identifiable. It's manufactured by the British government's Forensic Science Service, which keeps a data base of which batch helongs to whor We're starting to paint each of our laptops with this gizmo, so that if any is stolen and then recovered by the police, they should be able to identify it and return it no matter what's been done to it

We're not sure what to do about disk encryption at the moment. Windows 2000 provides file and disk encryption which would do the job very nicely since it would require no extra software and (hopefully) he neatly integrated

with the rest of the operating system. But we're not rolling Windows 2000 out to the users for at least a year. Pretty Good Privacy (PGP) Version 9 would do the job, but previous experiences with PGP have shown that even though its interface is clear and simple, it's still too complex for some of our staff. We're going to take a hard look at

PGP Version 7 in a few weeks to see if it can do the job The rest of my week has been spent closing off as many issues as I can before I spend the next two weeks concentrating exclusively on our software from Atlanta-based Internet Security Systems Inc. (ISS). We have six days of training on the software alongside our head office staff, a planning session on how we're going to use it, then a seminar on another company's implementation of the software.

I've got big plans for ISS's software. If it's really as versatile as it appears, then we're going to be able to use it to coordinate responses to a whole host of issues. I've heard nothing but good reports about the software ever since it came out, so I'm looking forward to

coming to grips with it. )

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Likable Little Laptops

Our reviewer finds a winner in his ongoing quest for a better, smaller notebook computer, By Russell Kay

EMP SEARCHING For the Perfect's small notebook computer to carry when I travel, and over the part six months. I've tried out a number of machines: Compaq's Armada Migot, Pujikuvi Lifelnoch 8 Scries. IBMS new "PaladPal XO. Toshibas's bortega 5480CT and finally a couple of ringers, NEC Computers 18c5: Mobiliero 700 and 880 (see "NEC's Small

Wonder, 'top right.'
All but the NECs are fullfledged Windows PCs that typically weigh between 3 and 4 he in their normal configuration. That's a basic requirement for this group. The catch: "Normal configuration" means no removable drives CD-ROM for DVD-ROM) and floppy disk drives are all externals. For the LifeBook and Portege, these drives attach by proprithese drives attach by propri-

etary cables with special connectors on each end. Also, there machines don't have all the standard attendment ports: serial, parallel, video our, Universal Serial Bus (USS), modem, network or mouse and keyboard — on boued. Mout rely on an external port replicator (usually cable-stanched) or put the ports on one of the external disk drives. Both approaches happen to bug me, but two midst like one or the tot two midst like one or the

other just fine. Ports and removable drives aside, these are well-equipped machines, with plensy of RAM, big hard drives and high-quality active-matrix displays no larger than 12.1 in., making for very tiny packages indeed.

very tiny packages indeed.

None of these machines has everything I'd like in one package, though one comes as close as I've seen.

#### Compaq Armada M300

Compaq Computer Corp. www.compaq.com from \$2,599

see class a more apparent ser, which belds an externed CD-ROM, DVD-ROM or floorpy disk drive and uses the same power supply, making it a very handy, easily transported package. But the Armada's apparent is one of the world offsiceral is one of the and relatively billium in action. The

worst of this banch, it's deed flat and relatively fishess in action. The current has since been upgraded to 10th (1024-by 705-pital resolution) over the SVOA-only model I used, and that's a welcome change. Overall, this is one of the most overvenient packages in this group.

#### Fujitsu LifeBook B Series

Fujitsu PC Corp. www.fujitsu-pc.com

coloring of the machine's small NA-N is some of min it intotional to the coloring of the coloring small to and then they include it the cores. Dob is a great registertion. Dob is a great registertion. Dob is a great registion. Dob is a great registion. Dob is a great registion, and it is better and new some rist than either a politic gride. (Also becoperated) or a touch paid. (Also become to the arrangement is that the costed dozene to re., and it reflects new audient form. and it reflects new audient very flat with only a se-re lost, and prince of the cost of a form of a large great way and the cost of a prince of the cost of a form of a large great way and the cost of a large great way

typing on it was a bit more of a chere then an other machines. This is a nice little machine that a let of people may find easier to use them other laptops because of the stylus and touch extrems combin.

#### IBM ThinkPad X20

IBM
www.ibm.com
When I started this r
tended to discuss ill
200 a time security

street in startes the revenit, I had strated in discuss BM's Thirthy 240, a tity, engaging machine with a few drawbacks (Technology, Nor. 15, 1996). Then BMI learnshed its successor – which is also the followers to the Thirthy 5570 – in which it has fixed all the problem areas and than some. The screen is mostly 2 in. Improve and has ligher resolution. The larger and has ligher resolution.

basic machine's Stanisara-and-justs body clips into a base that carries a floopy clist drive and has an open-bay that well take any of the spitial are hard-trive options that fit any of SBAT as own A- and T-Saries Think-Parks. It has unspecificantly the lost largical or any in this research; and include any in this research; as includes conventing trend over the laptings a Compact Flash slot that will take sold-takes securing the same and that sold take sold-takes securing the same and that sold take sold-takes securing con-

or TBLE to we TBLE Microsides, Linea of Autory life was a parkets with the 240.4 to the 220 has a bigger sharing. It comes have not been excluded in 1 had a share to by and beef. For the 1 had a share to by and beef, for the 1 had a share to by and beef. The top model, with a 000-98th CPL. The promote with a 100-98th CPL was the sharing of model and the 1 had a sharing the 1 had a sh

## Toshiba Portege



Toshiba America Information Systems Inc. www.toshiba.com from \$2,499

This machine brustrated one quite a like if we will made - numbling by the circum is expect from Seables. The heaphour's list file but has purely mode touch, and it has a politicity office, which I profer to a touch part. The 20th excess to bright and criep, that court is bright and criep, that court, tunhand of boding a well-state prated which, in 2400CT assess to have a 20th suspense jacon, almost an exemptive? yearned list, I tried the optional high-requestly succeed by the court of the seminative? Yearned list, I tried the optional high-requestly succeed by the court of the seminative in the court of the protection of the protection of the court of the cou

thord on essentible F-yearself (M.) third the optional high-enganity secand battery that olips into a separatbane, the solitoide highs on, becoming a half-inch higher and about 2 ib. honder. The separatio (MO-ROM drive) i reviewed is more than half the about of the books computer head, containing serial, purelle, PC Card, containing serial, purelle, PC Card, containing serial, purelle, and and propers, USE, network, video and and

#### NEC's Small Wonders



Pro 880 (\$1.099) and 780 (\$896) are ringers. They are Windows CI and have no hard drive. They do have very good color touch-screens and styluses and buth-in-56K-bit moderns, and they accopt memorable residue in the torns of Compact Flash or PC solid-state memory cards. The bundled applications are "pocket" versions of Microsoft Word, Essel, Powerfile.

Outlook, and Internet Explore: Though far from full-featured, they are adequate working tools. What sets these machines apert from other handheld PCs is their

write, sets traise machines agent from other handheld PCs is their keyboards, which are close to fullsize, with good feel. Of the two machines, the 880 of home in normal laptop, with its SI 4 in. SVGM screen (similar to

its 8.4-is. SVGA screen (smaler to the Company Aero 900; see Technology, Sept. 13, 1999). After using both, my choice in the 750. Its half-height screen makes it incredibly portable. It's great for taking along almost anywhore, it won't it into a phist poolor but riche handly in just about any kind of shoulder height protribte and its institution operation.

AC power parts. The power brick attaches via a rubbery connector that seemed firmy, though it worked the whole lites I used it. I flash the computer by Itself. But for traveling, when I later I would have to take along the bully external drive and the leating base, it would be a little

#### My Cheices

For general travel use, where I have to pick up Lotus Notes e-mail over the Internet, my choice is unhesitatingly the Choice is unhesitatingly the ThinkHod X20. The 12-in. XGA screen and clip-on expansion base make this a great traveler. If I didn't need Notes and could make do with Post Office Protocol 4-board internet mail, which would likely be the NEC MobilePro 780: big enough to do real work on, yet small enough and light enough to take any

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## **Quantum**

As we look beyond the Silicon Age. quantum computing offers up-to-now unimagined speeds, and it's virtually uncrackable as well. By Allison Wright

with speed previously unheard of the agility to solve calculations that would stymic a conventional computer and the ability to produce more secure lines

of communication. Impossible in the foresecable future? Actually, researchers think this type of machine, in the form of a quantum computer, may move out of their laboratories by the end

INE A COMPUTER | puter built to date, however, is a Shit device created by IRM's Almaden Research Center that has been squeezed onto a single molecule.

The concept of using quantum physics to perform simultancous computations on massive amounts of information has been in the works since the 1980s. It was only about five years ago, however, that quantum computing became a maior area of interest to computer theorists around the world.

quantum switches connected in parallel. In effect, it would be the most perfect form of parallel processing imaginable, dealing with information in a way that's impossible for conventional computers, which follow the rules of binary logic - an either/or distinction In a binary system, each bit of information is either on or off, one or zero, true or false. A conventional computer strings together combinations of ones

could conceivably process

every possible input simultaneously through a series of

and zeros to represent pieces of information, whereas quantum computers are made up of quantum particles such as electrons and atomic nuclei. Each particle represents a quantum bit, or qubit. Oubits differ from conv tional bits in that an atom or nucleus can be in a state of "su-

perposition," acting as both a one and a zero simultaneously um computers take advantage of the behavior and properties of atoms to potentially provide switching and processing speeds millions of times faster than those of to-

day's supercomputers. For example, if you have two oubits, they could simultaneously exist as a combination of all possible two-bit numbers 00, 01, 10 and 11. Add a third qubit, and you could have a combination of all possible three-bit numbers: 000, 001, 100, 110 and 111. This system scales exponentially: n qubits can stand for 2n numbers at once. Line up a mere 50 qubits, and you could represent every

binary number from zero to more than a trillion - simulta-

Overcoming Obstacles A major obstacle that reearchers face in developing quantum computers is making sure the qubits retain their superposition of being both - or either - a one or a zero. Observation of a quantum computer allows an outside interference such as light or noise to exert some influence over the outies. orcing them to collapse and leaving an ordinary computer based on ones and zeros.

In order to allow qu ites to store information, a quantum computer can't inter-act with its environment. But at the same time it has to be manipulated to allow calculations to be performed.
"Reliability is a serious fac-

tor for quantum computers. We need to devise ways of coding information so that qubits will not be affected by the environment - a fault-tolerant effect." savs John Preskill, a professor of theoretical physics at the California Institute of Technol-

ogy in Pasadena, Calif. Ouantum computers hold great promise in the area of cryptography. The transmission of encrypted data over using single photons (packets of light) could be used to foil code breakers. Oubits can't be copied or cloned, so it would be virtually impossible for a hacker to break code encrypted with a quantum computer On the other hand, "if a hacker possessed a quantum computer . . . security would be threatened because he or she would be able to break the

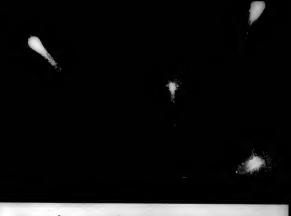
codes of conventional computers," says Preskill. Carl Williams, a physicist at the National Institute of Stan-dards and Technology in Gaithersburg, Md., and Umesh Vazirani, a professor of computer science at the University of California, Berkeley, say absolutely safe lines of comcation will require a quantum

renester A quar allow the photon being transmitted over optical fiber to be repeated without being disturbed. The repeater would allow the photon to be transmit-ted another 50 km. For this to work, the photon would need to be duplicated in its superposition (the pair of complex num

bers describing its position). 'A quantum repeater is possible in principle, and scientists are trying to make it hap pen. The main challenge is that the repeater must be a quantum device - some kind of quantum switch, since any measurement of the photos would reveal only a very small amount of information about the quantum state of the pho-

ton," says Vazirani. Scientists need time to work through the challenges of quantum computing, including the development of a comput er with capacity of 50 qubits or more, but the important first steps toward that goal are currently under way, according to





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#### Asking the right questions up front can mean the difference between a dream relationship and a nightmarish one. By Gary H. Anthes

T WAS AN E-COMMERCE MANAGERS WORST nightmare. The OshKosh B'Gosh Inc. online store appeared open to customers—they could place orders—but the orders went nowhere. The communications link between the clothing retailer and the company hosting

its Web site had gone down.

But the nightmare was just beginning. The Osh-kosh, Wis-based company struggled for several days to re-establish contact with its Web server at Diges Inc. in Cupertino, Calif "The [Digest facility was several town or the content of the Cupertino Calif "The Digest facility was several town."

to re-entantiat contact with its web server at Digex inc. in Cupertino, Calif. The [Digex] facility was secure, and they wanted a two-day notice before anybody could get into it," says Jon Dell'Antonia, CIO at OshKosh. "But how are you going to notify them two days before you have a failure?"

Dell'Anomia's problem was further complicated because OshKosh's outsourcing contract was with Sumsyuele. Callif-based application service prouder (ASP) Pandesic LLC, which bad, in turn, subcontracted with Diges for the hosting size and servers. And it was a fourth party — OshKosh's telecommunications carrier — their needed to get into the Diges.

site to repair equipment.
"It was like the Three Stooges and the Keystone
Cops combined." Dell'Antonia says. "If I went
through the whole litam, you'd be rolling on the floor

laughing. But we were not laughing at the time."

The lessons are clear for information technology managers: If you don't ask the right questions up front, you risk paying the price later. Fortunately, managers contemplaining moving to an ASP can learn from the earperiences of vertrain users.

#### Measure of Success

The Motiey Fool Inc. in Alexandria, Va. outsources the running of its payroll, budgeting and othor financial systems to Usinternetworking Inc. (US) in Ammodia, Md. Kevil Book, senior director of technology at The Motley Fool, says his own IT Carperts "went on-tile and really put them through the wringer: especially on issues of security, system availability, capacity for growth, data redundancy and technical support.

But The Motley Fool's interest in USi's technology went only so far, Book says. "On their hardware and software platform, we were relatively agnostic." he says. The bottom line for all the questions put to USi was "availability." and The Mottey Fool's contract with USi contains quantitative service-level agreements (SLA) and penalties, he says.

If the ASP ladoutry were a mature one users would just need to specify service levels in their contracts and let it go at that, says Audrey Apfel, an analyst at Garther Group Inc. in Stanford, Conn. The it's a nimature market. Half the ASPs are poing to fail, so you better spend time playing a good bet," she says. Apfel says customers often concentrate on the A

Apper says customers orient conternance on the A
in ASP — the application that will be provided — but
they should focus more on the 5 — the service component. "The thing that's important in the people,"
she says. "Ask them how they hire, train and retain
staff. When they have turnover, how do I know that
expertise I need is not walking out the door?"

Apfel says performance guarantees and penalties are important. That if there's a metric in your SLA you can't audit, it's not very useful." Audit tools could include user's own record keeping, reports from the ASF or automated, real-time Web monitors by Robertson, vice president of data center operations at USi, says users should ask, "Too say you are cooling to provide 999%, but how are you going to

#### measure it, and what does it include? Business vs. Technology

Another mistake some users make is bringing their application specialists but not their technical or operations people to meetings with prospective ASPs. When that happens, USI recommends that the potential customer bring more technically savvy people to the next session, Robertson savs.

Some users forgo the nitty-gritty technical analysis and simply count on being able to leverage their clout with the ASP during the course of service.

Clifford Macaylo is the supply-chain vice president at Fischbach & Moore Electric LLC in New Providence, N.L. which has contracted with Cephren Inc. in Palo Alto, Calif, for procurement and projectmanagement application services. He was he doesn't insist on performance guarantees in his contracts, because most ASPs are so new to the game, they will do anything to get and hold on to customers. "It's easy

anything to get and hold on to customers. "It's easy for me to get extremely top-level service," be anys. But didn't he check out Cephren in advance regarding things such as security and data backup? "I have to assume that with today's encryption and firewalls, that if they can't figure it out, I sure as hell can't fisure it out." he save.

> Half the ASPs are going to fail, so you better spend time placing a good bet.

> > AUDREY APPEL



ASPs "tend to be long on technical depth and short on business sense," Williams says. "The field is full of techles who really know what they are doing." He advises, however, that customers ask for a user advocate — "a single person within the ASP who's measured on keeping the customer happs."

#### Customization Counts

Like Fischbach & Moore, eVinyard Inc. in Poetland, Ore., is similarly blase about technical details such as an ASP's backup, recovery and security procedures. "These things are a basic entry point," says Michael Osborn, vice president of sales and technol-

Noticals (Ulsorit, vice president of sales and iechnole Vivrovoid in another Pandesia dammin in search of a new ASP, and the online wine merchant is likely to with listed Copis, baled Online Service (IOS). Onborn says. The ASP is attractive, he says, because of its proposed of the copies of the copies of the copies of home to be a search of the copies of the copies of home to be a search of the copies of processor of the television and representative of processor of these televisions and representative of the copies the copies of the copies the copies of the copies the copies of the copies the copies

But what's most compelling to Osborn about the service, he says, is Intel's ability to tailor its problem response to customer specifications. "They will do anything we say in response to a logged activity such as an error message," he says. "For example, we may just want them to notify us when a server is down—just make a phone call. In other cases, we may want them to do everything they can to get it back up."

This kind of Benibility is critical in a rapidly grow-

ing and evolving electronic business, Osborn says.

"We know their procedures, and they can be modified collaboratively, it's the ability for us to access—and help build—the run book for every discrete process." he says.

Dell'Antonia at Chibliosh R'Goth, says he will make sure he throughly understands his neat ASP's run book. "Something will be taken the first time in for them to define staffing levels in the Discontinuous and boot they really operate it." he says. "Do a first and boot they really operate it." he says. "Do a first and bow quick can we get someone in there if it's a problem you are not poing to work off." And he says he will insist on the right to make surprise visits to the ASP's data centre.

Abr's data center.

Dell'Antonia says he will also ask more probing questions about the spare parts and equipment that are kept on-site, the average time it takes to make repairs and the location of repair people.

Gartner-Group's Apfel says that's precisely the right approach. "The higgest pitall is assuming the ASP offers what you need, when what they are offering is whatever they cooked up in the har the nightbrier." Apfel says. "They are going to try things. ASP's business models are changing work by week." Apfel advises useen to carefully examine and docu-

Apfel advises users to carefully examine and document their needs before going to an ASP. "It doesn't matter what's in the contract they hand you," she says. "Make sure you have your own independent list of exactly what you need." >

#### Ten Questions To Ask an ASP

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## AVOIDING ASP ANGST

82

TECHNOLOGY

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#### IM SUITTON looked the data-warehouse monster in the eve and blinked. And be says be's glad he did. In late 1998, Shelton the director of information systems at Global Companies LLC in Waltham.

Mass., says he considered building a data warehouse to share data between the Lawson Software financial applications his petroleum-distribution firm was phasing out and the new Oracle Corp. financial applications it was em-

But be says he knew how expensive and time-consuming it could be to pluck just the data his users needed om the proprietary flat-file database associated with the applications from Minneapolis-based Lawson and to move that data to a data warehouse in a form that could be accessed by the newer Oracle relational database. In addition, updating all that data fast enough to reflect volatile shifts in petroleum pricing and inversory would

be a logistical nigh

By using a new type of middleware - call it data cataloging - to link the two systems, Shelton figures he's spens one-fifth of the time it would have taken to build a data warehouse. What's more, "Within a couple of days, we were producing data and producing reorts that did joins between the Oracle data and the mainframe," compared with the months or years it would have taken to build a data warehouse Shelton used Metagon Technologies

LLC's DQbroker, one of a growing number of tools that sidestep the cumme, time-consuming and politically charged process of extracting data from live production databases and storing it in warehouses where it can be queried and analyzed. Rather than moving the required data to a physical warebouse, software such as DQbroker creates a "catalog" of the data and lets users "order" just the data they need when they need it.

#### Share and Share Alike

Sharing data among incompatible databases is important enough when, say, accounts receivable needs a daily undate from sales to send out the bills or when accounting needs sales data from four subsidiaries to close the quarterly books. It becomes even more important when companies need to

buy and sell instantly over the Web. While different vendors take different approaches, the aim is to let busi-

ness users find the data they need in a data catalog and order it. The catalog consists of metadata about a database - identifying a data source, describing which tables and columns are available to be queried and even details such as

For years, IT managers have searched for ways to give users any data they want, anytime they want it, from any database. With some new tools, that dream is coming closer. By Robert L. Scheier

whether customers are identified by number or by a string of text such as a

The metadata is used to direct queries to the proper database and translate queries into the specific format the target database can understand. While some data still must be moved from production databases to users and some may be stored along with the metadata catalog, this spproach is often less expensive and time-consuming than building and restocking a full-fledged warehouse.

#### Peers Helping Peers

While most middleware tools create a central hub to catalog information and translate among the various data-base dialects, Matthews, N.C.-based Metagon scatters these function ng object brokers, one of which runs on every database platform in the system. Each broker is a peer, me it can do data-retrieval work for other nodes or ask other nodes to retrieve

By dividing up the jobs, DQbroker works more quickly than competing approaches, delivering small amounts of data from some nodes to the user while other nodes are still performing their queries, says David Brower, director of research and development at Metagon. This approach also reduces the amount of data moving over the network, be says, making it easier to scale the system by simply adding more brokers to a sizerle node or creat

ing new databases with an associated Perhaps Metagon's most importaclaim, though, is its ability to provide

seamless access to any database, from mainframe Cobol applications to popular relational databases such as those

of Oracle Corp. and Sybase Inc., and even Excel spreadsheet files.

Once installed on the database, the broker begins collecting information about the associated database and maintains that metadata locally. It also translates queries between database formats, says Brower

How well does it work? Well enthat Shelton was able to link not only his Unisys Corp. and Oracle databases, but also a database server from Sybase in Emeryville, Calif., and an in-house custom application for less than \$100,000. It took three days of consul tant time to get the links up and running. Shelton's needs are fairly modest:

a maximum of 15 concurrent users, accessing several bundred predefined re ports processed each night. But the process of giving users access to new tables using DQbroker "is almost akin to drag-and-drop," be says. "When we

tegration between systems, we look at DObroker Gest

#### **Getting Attuned**

The same challenge confronted an information technology manager at a large distribution company. The IT manager, who declined to be identified, needed to link a legacy Cobol enterprise resource planning system running on a Tandem Compoters Inc. fault-tolerant computer with a new SAP R/3 implementation running on

an IBM AS/400 and DR2. \*When you run an [inventory-based] business, you need to keep your systems in sync" during such a transition,

says the manager. His company also needed timely information to it could to business were the Web, giving its partners browsers accessible updates about such thines as order status. As for data warehooses, the manager snorted. "We don't bave time to sit down and redesion a data warehouse for (every) special

need" identified by bosiness manage After considering several approaches, including IBM's MQSeries message ing middleware and Microsoft Corp.'s BizTalk server, the IT manager chose Attunity Connect from Attonity Inc. in Burlington, Mass., formerly ISG International Software Group Ltd., which had sold the product as ISG Navigator. He says he was sold on the combination of Attunity Connect, the "plumbing" to link the actual databases, and Attunity B2B software, which holds the business rules that determine how data is transformed between the Tandem

and R/3 systems MOSeries lacked the extensive business-rules engine that Attunity B2B offered, and it wasn't as compatible with other platforms as Artunity, says the manager. Biz Talk lost out, he says, because "it's Windows-oriented" and would require a lot of extra develop-

ment to meet his needs The manager says he planned to complete prototype over the over and launch a ollot system this fall. His biggest surprise so far? "That we found a product that can connect and talk to all those different technologies in a re-

ally, really easy way," he says.

#### Barlic, Anyone?

Don't look for Garlic in any IBM product list - it's middleware techn ory built into Version 7 of IBM's DB2

#### No More Data Warehouses?

Article data production secure in comdata warehouse an expensive and time-







DATA CATALOGOIG ▶ Data catalog and associated middleware can process duenes softout the need for a dedicated







#### A Crop of Data Catalog Tools Attunity Inc.'s Attunity Connect

Application level middleware arried at synchronous (mal-time) information sharms Provides metadata catalon and pative links to target databases for greater performance and

IBM's Garlie: Detabase middleware available only in IBM's DB2 Version 7 and DataJoner Version 2. Uses "wrappers" to implementations to the DB2 query engine IBM claims Barks does better query optimizaten than competitors i enter support for databases other than DB2 and Oracle

tagon Technologies LLC's DQbroker Porr-to-peer, object ovented middlewave dis-Whytes metadata storage, query translation and query processing among "nodes" on each detabase. Metagon clarrs that it can access any data from marrirame Cobol applications to

Oracle Corp.'s Transparent Gateways. Besed on Attunity Connect, the gateways support access to more than 40 non-Ourie date sources including DB2. Sybase and Microsoft SQL Server. Among other functions, the gateway translates quenamong SQL dialects and caches brownsty used quones for greater performance. Built into OracleB.

Sybase Inc.'s Enterprise Connect Bata Access: Provides a catalog of data and apple cation objects available within the enterprise in addition to accessing data, users can faunch applications and stored procedures from the catalon Regause of the object-oriented nature of the catalog. Sybase claims, developers can work with the objects using a venety of devel-

opment tools including C. C++ or Java

wrappers only for its own DR7 datathe extent to which our wrappers have base and Oracle. With Dataloiner correctly modeled the behavior of the osers can view several other relational underlying [data] sources. databases, says Laora Haas, a research As a result, says Hans, "We do a manager at IBM's research center in much better job of query optimization

than any of the competition. For business users, though, the real value of these new tools lies in that they let business users analyze their data with off-the-shelf query tools, without having to know or care where the data resides. Which is just what Shelton and other IT managers say they want.

Freelance writer Robert L. Scheier. formerly Computerworld's technology editor, can be reached at rscheier@charter.net

er database-connectivity software In Garlie, the metadata catalog takes the form of "wrappers" - software that describes the data in the remote database, translates commands between the DB2 query engine and the target databases and helps the query engine determine the fastest way to execote the query

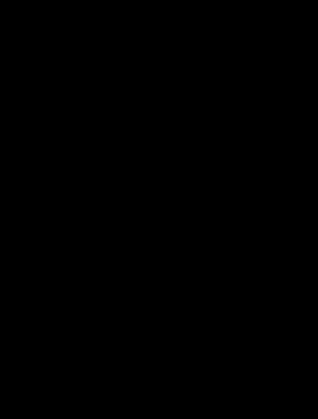
Because the wrappers also know how each database processes queries. such as the number of tables that can be accessed per query, DBZ's operyprocessing engine "can decide the best way to process that regoest," says lim Kleewein, a member of the senior technical staff at IBM's Silicon Valley Laboratory in San lose. Like other competing technologies, Garlic can also cache some of the data itself to speed the retrieval process.

Currently, within DB2, IBM provides

database and Version 2 of its DataBoin-Almaden, Calif. In the next major release of DB2, expected sometime next year, many of the data-access capabilities now found in DataJoiner will be incorporated into DB2, she save

For now, IBM is doing most of the wrapper-writing itself, as with its Discovery Link package of products and services for helping scientists track and categorize homan genes. IBM also plans to publish an application pro gramming interface to let outside developers write their own wrappers. If Garlic is currently limited in its support for outside databases, its strength "is the extent to which the wrapper participates in the query

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A pricetag that makes you say, "How?'

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## **IP Multicasting**

N THE WORLD of Internet Protocol Version 4 (IPv4), you can send data packets to three different types of destination addresses: unicast, broadcast and multicast. The majority of Internet traffic today is unicast, meaning that an address targets a single destination host. In other words, if you send a packet to that address, it will be received by a

There are also broadcast addresses, which are, by IP convention, interpreted to mean "all hosts connected to this nctwork" rather than to any single host. Send a packet to a proadcast address and it will be delivered to every host connected to the network specified by the address.

Unicast is great - it's what lets you connect your browser to your favorite Web sites. download files and do most of what gets done on the Internet. But it tends to be limiting you can communicate with only one host at a time. Operators of a Web site providing streaming video might prefer m send out those streams once and have lots of people receive them, instead of managing the overhead of sending out a sep-

arute stream to each viewer. Broadcast might seem to be a good solution, since your packets get sent out only once and could, in theory, be delivered to every host on the Internet, but in practice, broadcast solutions are generally frowned upon. Back in the early days of the Internet (the late 1970s and early 1980s), broadcast was thought to be a good way to propagate network information. But broadcasts crowd out other kinds of traffic, even when they're used only on a single network or subnet; all-Internet broadcasts

were ruled out early on To get your packets to many recipients, IP multicasting is the way to go. IPv4 Class D addresses (those with values in the range of 224,0.0.0 through

DEFINITION IP multicasting is a method of delivering a single packet, sent only once by the source host, to multiple destination hosts that may be connected to scattered subnets.

for multicast use. Each address can be associated with a multicast group. To receive data sent to that address, you must join the group. This also works for many-to-many communications, since every group member can originate packets.

ning a Member To join a group, notify your ocarest multicast-enabled router, which puts you on its list of group members. When the router sees a packet addressed to your group's multicast address, it forwards the packet to you and ammore else in the group served by that router. Routing IP multicast packets makes unicast routing - get-

239,255,255,255) are reserved | ting a unicast packet from its source to its destination, across a constantly changing landscape of interconnected networks - look like child's play The idea is to try to minimize duplication which mustar band. width, while also ensuring that all members of the group get all

the multicast packets. And, of course, those packets should all he delinered in a timely fachion Implementers have been working on scalable multicast routing solutions for wears. Multicast-routing strategies depend on whether the distribution of group members is dense (where most network hosts are multicast group members) or sparse (where most hosts aren't multicast group members).

The basic strategy for densemode multicast routing is "flooding": All multicast-enabled routers receiving a multicast packet just retransmit the packet on all their networks except the one from which they received the packet. This way, all routers eventually see all multicast packets. Of course, this approach presents scalability problems because it gen-

erates a lot of traffic. The basic strategy for sparse mode multicast routing is to avoid sending routers multiple copies of the same packet and to try to send multicast packets only to routers that serve

**Not Onite Perfect** 

lticasting does have some drawbacks. It's connectionless. which means you can't easily set up reliable streams of data, such as with Transmission Control Protocol Multicasting uses the less-reliable User Datagram Protocol by default. The biggest problem is that few Internet service providers are set up to handle multicast packets, which is a shame, since multicasting can enable so many interesting applications.

For example, the Internet Engipeering Task Force has long used the Mbone — a multicast backbone - to broadcast its events. Multicasting can also reduce some of the overhead associated with voice and videoconferencing across the Web.

The IP Multicast Initiative (IPMI), a self-described "worldwide, multivendor forum accelerating the adoption of IP Multicast," lists providers that offer multicast services. The short list includes leading providers such as Aboundles Comresonications Inc. in San Francis co, UUnet Technologies Inc. in.

Ashburn, Va., and Sprint Corp. Though not yet a runaway success, multicasting still has great potential. According to a white paper published by the IPMI, Intel Corp. began using multicasting in 1996 to transmit events such as product announcements and demonstrations. At the same time, Microsoft Corp. started to make executive speeches as well as local radio, MSNBC and BBC broadcasts available via multi casting.

Loshin is o freelance writer in

Arlington, Mass.

**Multicasting in Action** 



This figure shows the Internet on the right and an intranet with a multicast-enabled router on the left. The router is connected to the intranet and the Internet. The intranet contains several bosts one of which is aiready a member of a multicast group; another

is about to become a member of This arrow links a node that isn't already a member of a multicast group and the local multicast-enabled router. The packet sent is a request to be included. in the group, sent to its local

multicast-enabled router 2 A packet arrives at the local ticast-onabled router from the Internet, addressed to that

The multicast-enabled router forwards the multicast packet to both members of e group that are on the local intranet, but not to any other nodes on that network,

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#### Start-up ViaFone.com Gives Sites a WAP

considerations as well as how Company offers fast installation of to communicate with back-end business applications like enwireless application support for Web sites

STTING A WITEless application quickly is specialty of apservice provider (ASP) ViaFone.com Inc. in Redwood City, Calif. And speed was what John Mcfaces and wireless bandwidth Dowall, chief technology officer at Santa Clara, Calif-based

mySimon Inc., wanted. MySimon is a buying guide for Internet shoppers - what to buy and where to buy it online. It has a large Web site that dishes out this information on demand. The flaw in that design, explains McDowall, is "the vast majority of the users are not at their PC when they make a broving decision "

McDowall wanted a wireless

replication that would out mySimon information on cell phones and handhelds, serving those shoppers who are standing in the middle of Baby Gag rompers for less on the Internet? And he wanted it fast.
ViaFone delivered in five weeks, McDowall says. A Web hetp://wap.mysimon. com, sends visitors to ViaFone's vers. ViaFone caches the main pages of mySimon.com and the site's hierarchy. When overies come, it sends an HTTP request to mySimon, accepts XML data in return, then converts it into an appropriate format for the user's wireless device. ViaFone includes moport for BlackBerry handhelds

Research In Motion Ltd. and Palm OS handhelds. Wireless applications have a strong future. International Data Corp. (IDC) in Framing ham, Mass., projects a 93.7% spound annual growth in the use of smart phones. Also, by year's end, all digital phones shipping will support the Wireless Application Protocol

om Waterloo, Ontario-based

(WAP), according to IDC. ViaFone CEO Bernard Desmauts says what made my-Simon's five-week time frame possible is that ViaFone has an integrated set of development tools and delivery services that understand the inc and outs of various mobile device inter-

terprise resource planning and customer relationship management packages. ViaFone is set up so that someone with knowledge of only markup languages can design a wireless application, says Desarnauts. "We want to rize the resources to build, deploy and majorain wireless applications," he says.

An advantage that ViaFone

ViaFone Inc. elion: 2000 Revine Parkway Suite 203, Redwood City, Calif.

sohone: (650) 413-5550 Web: www.vistone.com

The technology: Wireless and cation service provider and devel-Why it's worth waishing. The service is fast to mo

and works with many weeless serwcas, back-end systems and data samputs, CEO and

· Josh Shin, vice president as development and ndo Ruarte, vice ove

neering and co-founder es. ber 1999: Founded

· May 2000: ASP launched

mulie. · Sept. 2000 Devel emerging comment conduct secompănies leased as beta Employees: 62 105% annual 3mm growth rate projected

Burn money: \$11 million from Dissour Fisher Japonton and Partiach International Inc. plus angel funding

Products/pricing: VisFore One Bridge Mobiley Pattern (in beta): starts at \$100,000 Services/origins, Vafore No.

ble Application Server, starts at \$150,000 per year Customers: mySinon com. COrox Onine Inc. Trivetnesse

Online-Chysearch Inc. Partner (II Iv Red flags for IT:

Visitione be a surroug? · Are enough customers / no wissing to untily the cost? delivers, says Ken Smiley, a senior industry analyst at Giga Information Group Inc. in Cambridge, Mass., is that it's technology-agnostic. The comparty is willing to work with all carriers, all types of connections and all kinds of enterprise systems. "I think that is an advantage long term in that market space," he says.

#### Possible Problems

One potential pitfall for Viz-Fone, Smiley says, is that the task of mobilizing enterprise applications is difficult

### "I don't believe that it's as

easy, quick or inexpensive as people are led to believe by the marketing hype," be cautions. That's led a lot of potential customers for ViaFone to wait

for leading vendors to emerge with a proven product. The bad news for ViaFone is that it needs big clients to prove that its approach works and to pump some needed practical experience into the comp Although ViaFone's client list contains some well-known names, not all of them are cur-

rently fully committed to wireless. McDowall describes his company's project, which accounts for less than 5% of the site's traffic, as an experiment "We want to set into this space, understand the technology and understand what users like and don't like," he says. VisFone has released a beta version of a soft-

ware development kit. OneBridge Mobility Platform, that less companies build and host their own mobile-

enabled Web sites Smiley says a two-pronged approach - development platform and ASP - is a good move because customers want different things. But for a small company like VisFone, main-

taining growth and momenrum on two fronts may be difficult, be warns. The company expects rev-enue from OneBridge to grow

to 80% of sales, says Denarnauts. Currently, all revenue comes from ViaFone's hosted services, which were launched in May. While VizFone declined to provide actual revenue numbers. Desarro projects revenue this year in the seven-fuzure range.

Johnson is a freelance writer in

#### the buzz STATE OF THE MARKET

#### Join the Crowd Analysis say the big job for WaFore is

distinguishing itself from the dozens of other vendors clarrang to have a wareless application product or service. Carl Zette, an analyst at Gigs Information like ViaFone that come at the problem from the wireless end of things, ASPs are adding werders canabilities to the offennes, hoping to capture that emerg

Gras analyst Ken Smiley says he see: dors. One is content aggregation, in which data is sent between back end stores and the mobile device. In this sid uation, content is static. Amuch harde that mobile devices interact with back ends the same way that desktops do, by building mobile applications that

change data and perform transactions. Companies are prefly clear on the types of applications they went to mob Ran, says Smiley. At the top of the list is the backbone of corporate communications:e-mail.contacts and scheduling. Next comes sales force automation and inventory tracking, followed by help dask or customer service application It's far too early to tell if VerFore can

pull ahead of the composition, says Smiley. They could make a name for there selves, or they could fade away." he says Not only is that true of VerFore, he adds. but also of anyone else in this new field

#### AvantGo Inc. San Mateo, Calif. www.avantgo.com

AventGo is adopting the same due pronged approach as ViaFone - both internal development tools and a hosted service. It also has more than 1,000 ners that have built channels that sed information to wireless devices.

#### Everypath Inc.

Senta Clara Calif www.everypath.com as a middlemen between a Web site and

#### the customer's Website for mobile users. It supports transactions such as purchasing goods and auctions

#### NetMorf Inc.

oww.netmorf.com

SheMorfer is an XML-based development and server platform for e-core merce that locuses more on integration

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## South Florida Turns Up the Heat



With Internet development skyrocketing and South American trade flourishing. the demand for IT workers is hitting an all-time high on the Sunshine State's southern shores. By Erik Sherman

LORIDA has developed a reputation for having four industries real estate, sunbathing, oranges and Mickey Mouse. Parts of the state are trying to counter those perceptions with "silicon" monikers. That includes southern Florida, which alternates between Silicon Beach and the Internet Coast.

Internet-related ventures here have been successful in ubtaining one of the few network access points in the country, and there's growing potential for information technology professionals to find their place in the sun. But depending on your current location, you might find that the environment could burn your wallet as well as wour skin

#### **Ausiness Climate**

There are certainly olenty of corporations needing IT help. A survey of central Florida alone, conducted by the University of South Florida in Tampa, shows a need for 11,000 more high-tech workers by

The American Electronics Association (AEA) and the Nasdaq Stock Market Inc. rank the state as sixth in high-tech

cornerations in the state

center in Miami, while Tampa is home to Pricewaterhouse-Coopers' main training center. IBM and Harris Corp. are longtime residents, and there are many government and arrospace opportunities near Cape Canaveral. Growth has been strong in Internet-related com-

punies throughout the state There are more than 5,000 computer and Internet and communication service companies in Broward and Pales Beach counties today," and that comprises a small nurs of the state, according to Ann Salam one, CEO of Enterprise Development Corp. in Boca Raton.

Southern Florida has also become a strategic location for companies looking to do business in Latin America, Startups will continue to flourish in the medium term "just because the other markets are very saturated and competitive for the venture capitalists," says Jeff

employment and seventh in the number of job increases in the sectur. There are also large CSX Technology Inc., one of the six largest railroads in the

think, which has offices in U.S. has an IT staff of 600 in these other cities. "There's a lacksonville, Arthur Andrewe fight for experienced talent." LLP has a major global IT also a particularly strong need for IT directors and others with project management ex-perience. Also needed are Web developers, database experts and people with experience in enterprise application inte-

gration According to Wayne Coonan, national accounts director at MRI Tampa Corporate Offices, Cisco experts with Cisco Certified Internetwork Expert ratings and Solaris manus are also in hot demand, as are people who understand how systems can work together. "A liob title that we had a

Beach office of Silicon Valley

Bank, a Santa Clara, Calif.

based commercial bank that in-

vests primarily in the IT sector

ranking also shows that the

number of high-tech employ-

ees, as a percentage of private-

sector workers, in Florida is

20% below the national aver-

age. Although the absolute

number of job increases was

high, the percentage was also

Agriculture and tourism are

"still probably the majority" of

businesses in the state, says

Guy Hagen, assistant director

of econumic development at

the University of South Florida.

Nonetheless, Florida has a

good job market, "It's not dif-

ferent than it is for us in

Philadelphia or Atlanta or New

York," says Ted Fernandez,

CEO of Miami-based Answer-

Rapid growth means there's

Strong Job Market

below the national average.

Yet, not all is rosy. The AEA

need for [was] an IT architect - an individual who can come in and really help us design and ... make sure we are doing the right things moving for ward," says Jack Morgan, assistant vice president of human

precoupose or CSY Although demand for IT workers may be strong, don't White, sensor vice president expect to make the same money the market in other states offer. Salaries are "clearly 10% less than the national mean." says Dan Smith, managing

partner at MRI Tampa Compared with the high er-cost markets like LA and Boston, we're probably 20% or 25% lower," says Smith. In addition, the cost of living is probably right at the national average. There is no state or local income tax, but there are sales taxes and other charges.

"We talk of ourselves being a lower cost-of-living state, but we're not " Smith adds "We're nickel-and-dimed on many thines, like toll roads."

However, if someone enjoys outdoor activities, fine dining, cultural activities and night life, there may be a spot in the state to soothe cash-flow cramps. Schools are "not bad." says Jan Nelson, director of global services at Newburyport, Mass, relocation firm Mobility Services International Inc. "But in terms of comparative merits, they wouldn't rank as high as schools in California and the Northeast," Nel-

son says IT workers relocating to Florida from other parts of the country may have some adjustments to make.

John McVey, an IT architect at CSX, has twice relocated from Pennsylvania, "The South has a stereotype of moving a little slower than the North. McVey says. "I wouldn't say that's necessarily true "

A fast-growing population can also make it easier to fit in. There's a number of growing communities, and that has put people in many instances in a similar situation, where they're all relatively new to the area, and there's more of a sense of community than in well-estab lished Northern comma where people have been living there for generations and you have to break in, and its diffi-

cult," says McVey. In general, though, people from certain areas of the coun try will find relocating to Florida easy to adapt to.

"Florida works well for peo ple transferring in from the West Coast. People are delighted because of the much lower costs of real estate and the many choices they have," says Nelson P

Sherman is a freelance writer

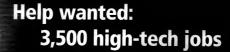
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## Diversity Not a New Issue for These Companies

Over the past 15 years, business discussions concerning diversity have moved from "it's the right thing to do" to "it's a business imperative." The change has been the recognition that being able to attract the top talent - regardless of gender, color, education, background or age - is a priority for any business.

#### Kellogg Company Battle Creek, MI

\*Diversity at Kellogg is a matter of practiong what we preach," says Andre Goodlett, Kellogg associate director of staffing. "We have diversity in our leadership, end the demographics at every level reflect a diversity of color, gender and background."

While the face of Kellogg is a diverse one, the head of the Diversity department reports to the Office of the Cheirman, assuring that valuing differences emains an important part of business operation. "Diversity isn't e once a year thing here," adds Goodlett. "We have the programs and events, but more important is that we understand that a talented, diverse workforce is the lifeblood of

This talented, diverse workforce carries through to the IT organization for the company best known for Tony the Tiger" and those zarry guys Snep, Crackle and Pop". "We're in an exciting time for IT," Goodfett says. "Our e-commerce program is multi-faceted, including a brand fovalty progrem known as FAT and FARN" and the more traditional e-commerce espects of operations management. Our web site has alw been e leader, but we are pumping it up on a

IT positions at Kellogg include database igement, analysis, network erchitecture design and management, system integration, ERP systems and project management. "Because IT is a driving force behind our business, there is a lot of opportunity for hands-on experience," says Goodlett. "We have complex projects across multiple technologies. If you're interested in ma a contribution and being able to go as fer as your talents allow, this is the place."

#### KPMG Consulting, LLC Dallas, TX

Sean Huurman, national director of recruiting for KPMG Consulting, believes technological innovation and the war for talent have created the business imperetive of diversity. "It's not just a socially conscious thing to do, it's e strong business decision," he says.

"As the technologies have continued to develop and very, we're finding new strongholds of technology expertise, which also adds to the diversty of the organization," Huurman says. "We also are seeing an increase in effort at U.S. schools to recruit and graduate diverse candidates.

Globalization also has created diversity revolu-For instance, as we work with I atin American our munication companies, we know they won't settle for consultents who don't understand the culture, the community and the directions in terms of what they are looking for," Huuman says, "English may be the global language, but it is very much a second language for many of our clients. It's up to us to be able suncate, not up to our clients."

KPMG Consulting expects to fill 3,500 IT positions in 2000. The company is recruiting for all types of e-commerce, m-commerce and basic technologies. Java, C++. Portal and Cobol, as well as skills required for billing and call centers. The company has loca-tions in 825 cities worldwide. "Technical skills are important," says Huurmari, "but more important is understanding how technology plays out in the work dev for the individuals who will use the technologies.

"We don't organize around individuals or diffe " says Huurman. "We organize around our work. Any job candidate, regardless of race or gender, is looking to use the skills they know, to learn new skills and new technologies. And we offer that to every candidate who walks through the door Our job is to build relationships across the firm that support our employees. The number one selling point for us is that we consider ourselves a \$2 billion startup. We are pre-IPO, we play in an exciting e-business space. The key difference is that we have the knowledge and backing of e stable, revenue generating organization."

#### Pitney Bowes

Mailing Systems Division Stanford, CT

For over seven decades, Pitney Bowes has been a corporation focused on arsuring that their employee population reflects their customer base end their munities. The result is a company whose history is steeped in valuing diversity, where diversity is a

part of the business planning process and where diversity is valued because of its ability to creata new irleas and innovations

"We're a company that takes onde in the number of inventions and patents we hold," explains Linda Stephenson, director of staffing "We have lab units within the company, places where employees can go to invent new products. It's a fantastic play space for the technologically telerated, where they

can go end create Mane Radcliff, manager of diversity and compliance. says this innovative approach is possible because the company has paid so much attention to diversity "We were 'sending' the message long before most companies were 'getting' the message about diversity," she claims, pointing to the company's pro-active outreach efforts, which predate the Civil Rights Legislation. The result is that Pitney Bowes has made it a function of business, continuously conducting research to assure that the company's job openings get in front of the faces of diverse people. Today that means everything from working to identify new and emerging web sites to ensuring all audiences have enual access to Pitney Rowers Making Systems' opportunities. Pitney Bowes Mailing Systems will be participating in the Women of Color Technology Conference in Orlando.

Currently, Pitney Bowes Mailing Systems is reinventing its IT organization. The division has identified emerging technological needs, the skills needed to support them, and the jobs required The jobs range from an IT leader for the human resources oroug to web developers, e-commerce experts, network developers, storage and database managers and analysis, platform integrators and client/server leaders. "The projects being designed now vary from enterprise messaging, network design, supply chain and e-commerce to new services that we will provide to small and large business customers," says Stephenson.

of one of our project crews," she adds. "Pitney Bowes is a great place for people who want to invent and create, who are looking for strong work/life balance and support for continuous is ing. We look inside first for our leaders, and that requires that we continuously look at skills that will be needed and provide the opportunity to gain

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Continued from page 1

#### Corporate Cable

Over the past five months, First Hawaiian has connected 60 dektops to the high-speed (10M bit/sec.) Oceanic service. It expects to have 1,000 desktops booked into the cable system by the end of the year.

ir expects to nave (1,000 desstops hooked into teable system by the end of the year. Tablashab is add Oceanic provides him with faster and more reliable service as a lower cost than similar offerings from the local plone company, a subsidiary of New York-based Verrizon Commissions. Talashabil said that when his company priced comparable high-speed services from Verizon Bl montals ago, the phoses and Brometta ago, the propose

zon 18 months ago, the phone company's rates were "almost double" those of Oceanic. Verizon failed to return calls for comment by press time.

#### Homeorown Demand

Oceanic speet 575 million Coeanic speet 575 million cight years ago to upgrade its cable network to support twoway, high-opped data service for its 300,000 residential subscribers. It initially had no intention of serving the corporate market because it didn't anticipate that there would be any demand, said Kiman Wong, the company's general manager of literary services.

manager of Internet services. But "once people had [Rook and Runner] at home, they wanted it at work." Wong said. The company now services 1,300 commercial accounts. To beef up its commercial business, Oceanic developed a suite of corporate access products, of-fers Web hosting services and plans to extend its commercial reach by wiring the urban core of Honolauk. Wong added.

Cox Business Services, a division of Cox Communications Inc. in Atlanta, is another cable company that is pushing toward providing high-speed Internet access for businesses. Users said they're pleased to find a cheaper alternative to

the local phone company.

Jim English, chief financial
officer at Lopez Foods Inc. in
Oklahoma City, said Cox's "aggresstye" pricing for its highspeed service was a key factor.

western Bell Telephone Co., a subsidiary of SBC Communications Inc. in San Antonio. Lopez, which produces bam-

burgers, sausage and Canadion bacon for McDonald's restaurants, has 75 users hooked up to the Cox service and plans to use it in its new executive office building. The highspeed connection "means people are not sitting here widdling their thumbs waiting for their e-mail," English said. Cox, which operates as a

Cox, which operates as a competitive local exchange carrier in Oklahoma City, of-fered Lopez a package of services that included high-speed data and phone service priced data and phone service priced 41% below Southwestern Bell, which subsequently made a counteroffer. But Cox still charges 12.5% less than the deal offerend by Southwestern.

Bell, English said.

Ken Tysell, director of DSL
business/retail at SBC, acknowledged growing competition with cable TV companies
for the corporate market.

They're munching at our
business, but we're also
munching away at theirs, Tysell said. "Clearly, competition
is increasing in broadband...

but we believe we have a smooth

or better offerings as theirs."

Continued from page !

Recruiting

often means hiring people right out of college.

At Washington-based Potomac Electric Power Co., the focus also has been on hiring IT rookies such as new college and technology-school gradus.

tomac Electric Power Co., the focus also has been on hiring IT rookies such as new college and technology-chool graduates. We do want to retain our people." said Ken Cohn, the utility's CIO. 'On the other hand, we know that we're so poing to in all cases. And so what we're trying to do is constantly backfull with rookies.

young talent ... that we can train quickly."

Mendes, Cohn and other IT executives discussed labor issues as part of a panel at the 2000 Greater Washington Technology Showcase conference and technical expo. MemDavid Barnes, an information systems manager at National Loan Investors IP, a mortgape servicing company in Oklahoma City, said connectivity, not price, prompted him to choose Cox over Southwestern Bell. "We're at the end of their copper plant, and their could not offer us the service we neceded." he explained.

National Loan is in the process of upgrading its service to a dedicated TI line and a hardware virtual private metwork. It's sticking with Cox, Barnes said Barnes said he uses his residential Road Runner service to manage batch processing on office servers at night. much more convenient from home," he said. "And I can do everything I need to do. [including running] diagnostics." The business of providing high-speed cable services to corporate America is in such a stage of infancy that The Insight Research Corp. in Parsippany. N.J., was "surprised" to discover the inroads it has started to make, said Christo

pher Whitely, project manager for a recent study on Digital Subscriber Line vs. cable. "We started the study with the preconceived notion that cable provided only residencial hiring and retaining workers is

being flexible with employee

needs and staying in tune with

If companies provide their

employees with viable career

paths, educational opportuni-

ties and the ability to work

with new technologies and

"give them a life that is semi

sane," retention rates send to

But Mendes said IT man-

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be high. Mendes said

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their career goals and plans.

service ... but we quickly pot an indication that there was also a business marker. Whitely said. "It's still in its early stages but should grow over the next five to fily years." By 2005, finship predicts, the U.S. will have an installed base of 32 million cable modens, generating \$15 billion per year in revenue. The research firm didth break our business.

firm didn't break our business vs. residential data. Road Runner LLC in Herndon. Vs. owned by AT&T Corp. Time Warner, Microsoft Corp. Compact Computer Corp. and Advanced Communications-Newhones, foresees growth in package plains for businesses that want highspeed access for telewookers.

speed access for teleworker.

Mark Mercer, vice president of commercial services at Road Runner, said he intends to pursue as much corporate business as he cas land. But, he added, he helienves that growth will come even more quickly from package deals for remote workers or telecommuters in the 44 Road Runner markers.

nationwide.

"We're going after national accounts for telecommuters."

Mercer said. "with a great deal on a bulk price for corporate accounts."

agers should also think about hirting more minorities and disabled people. Older IT workers with skills no longer in demued also have potential, he added, "If they had the ability, from an intellectual standpoint, in learn the legacy systems, why can't they have the ability to learn they have the ability to learn

the new systems?" The need to he creative in employment matters is being driven, in part, by the continuing IT labor shortage, Mendes and other panelists noted. For example, Meta Group Inc. in Stamford. Comn. estimated that there will be 850,000 vacant IT jobs in the U.S. by wart'scred.

year's end.
Fairfax County, Va., has succeeded in filling all but IS of its
367 IT positions by emphasizing its fleribility on issues like job sharing and by making few extra demands on a worker's time, said ClO David ModCable's Coming Representative corporate cobier date pricing: OCEANGE CARLE had Russer Pro Supports up to 10 uncer

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to work on weekends, except on special projects. Even then, "it's nothing like the grind of the private sector," he said.

the private sector." he said.

The federal government,
which is facing a pressing new
for IT help because of growing
numbers of retirement eligible
workers, is attractive to people
workers and a state of the conprotor of the advanced technology program at the U.S. Department of Commerce. "Noe
everyone wants to work 80
bours a week with a chance as

being a millionaire at some point in their life. he said. But one thing the federal government can't do is move quickly to extend an offer to a potential employee. Baluis and Getting a federal job frequently can take 60 to 90 days. "I couldn't comprete livith the private sectorl even if they

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FRANK HAYES/FRANKLY SPEAKING

## The name game

AKE FIVE MINUTES and try something: Make a list of the 10 Web addresses you'd be most likely to guess for your company's Web site if you didn't know its actual domain name. (If you can't think of 10, throw in a few likely misspellings to pad out the list.) Now test them with a Web browser. Any surprises? There really shouldn't be, but there probably are.

Find a few other people in your IT shop and ask them to make the same kind of list. Then test their lists. A few You're spending even more to make sure the

customers

actually use

the Web:

They guess.

A lot.

new guesses, a few mure surprises, right? Now ask some friends or family members to make the same sort of list. Try to get a wider range of ages and personal backgrounds into

the mix this time. Still more guesses, still more surprises - but you're starting to see patterns. aren't you This is how customers actually use the Web: They guess. A lot. Once they've found a Web

site they want, they may bookmark it. If the first few guesses don't pan out, they may use a search engine. But there's a lot of guessing going on out there And it's a good idea to keep track of what they're likely to be This is how

guessing - and to find out where those guesses will take them. Say you work for a U.S. airline. for example. United-air.com is the address of a Taiwanese aircompressor company. American.com leads to Cisco Systems. Deltaair.com and Continentalairlines.com take a customer to

the same travel agency, and continentalair.com to a different travel agency. Us-air.com, Transworldair.com, Alaska-airlines.com and Southwestair.com are owned by the airlines you'd expect but aren't connected to the appropri-

ate Web sites. And that doesn't include domain names owned by compan that have names similar to the airlines but no Web sites. Or do main names owned by cybersquatters. Or any sites a customer would hit by mistyping the name (Untied.com,

for example, is a site for complaints about United Air Lines) And this is just a snapshot from October

2000. In a month or a year, more chances for confusion could crop up.

Confusing customers is something you want to avoid. Your marketing department may be spending buckets of bucks promoting your site.

site is attractive and works the way it's sup-

THE BACK PAGE

posed to But that's all money down a rat hole if the customers never get there

And while it's technically Marketing's job to build your company's brand and Legal's job to protect it, don't kid yourself - when it comes to domain names, IT is supposed to have the experts.

So what can you do to stem that confusion? That depends on what the name same turns un. Maybe you'll find some confus ingly similar domain names that haven't already been registered. Registering those available domain names, and pointing them to your home page, is a cheap way around an easy-to-botch With address

Maybe you'll learn you've already got some of those domain names - and no one remembered to redirect them to your

home page Maybe you'll discover cybersquatters you didn't know about. Kick their names over to Legal to decide whether any action is

And most likely you'll stumble across some legitimate busin es whose domain names are a lot like yours. That kind of confusion is nothing new - long before the Web there were United Air Lines, United Van Lines and United Technologies. But at least you'll know why misdirected

e-mail and Web surfing may have gone astray. So play the name game. Play it often. Keep testing the results. Because on the Web, as long as your company's customers are playing guessing games, you should be too.

Hayes, Computerworld's senior news columnist, has covered IT for more than 20 years. Contact him at frank hayes@computerworld.com

PLUG IT IN Long IT plot fish at a manufacturing plant must add two PCs where there's only one network connection. "Screete solution - First use a minibile to connect both computers," says the fish. But early one Saturday. fish gots a call. The two users can't loo on. PCs are on? Check. Cables and power cord connected? Yes, the users

the remote section of the plant and plugs the power cord hard onto the high TURN IT ON Alter 10 minutes on the phone troubleshooting a monitor problem ("Monitor is broken and user has been unable to get on his computer for days, he says 1, LAN admin do patches support pilot fish to the user's office. After a moment's

inspection, the fish pushes the

swear. Fish sighs, climbs out of

bad, drives to the plant, hikes to

power switch on the user's more for to turn it on, and then re boots the PC - which had been in nover-save mode TURN IT OVER A user reeds help resynchronizing the stylus for his PalmPliot. "Look on the back of the PaintPliot, and you'll see a lim hole with the word re-

set beside t." fish says. Not there, says user Fish trudges over and discovers that the une has Reped open the handheid's covers the back instead of the front of the PaimPliet Fish closes the flap "Oh, there it of" sees PULL THE PLUS IS OUT UNIT

terruptible power supply (UPS)

system adequate? new IT boos

asks. Sure, pilot fish answers: Each server is on its own UPS with 30 minutes' battery time. ive close and am paged when the machines go down," "What about this one?" the boss asks. porning to the e-mail server. "Is it ready for testing?" Fish nods and the boss dramatically grabs the power cord and puls it straight out of the back of the server. The machine restauts stoce dead. "I thought you said these things were on UPSes. ss complains. Result: If a.m.

In 3 nm with on e-rousi Make the connection: sharky@ computerworld.com. You score ashero Shark shirt if your norn sons print - or if it shows up in the daily feed on the Web at consistenced com/shade

#### The 5th Wave



Come on in. I left my new voice recognition system on so you could tru it."

Don't let your e-commerce deployment become a sci-fi

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#### He won't shop in supermarkets

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And he'll do his banking from wherever he is

#### Make your business mobile

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to make it all work seamlessly. 2 k ep you up to date with new technologies

ir La midless stream of new ideas. Be ause one thing is for sure: It's today that determines who you'll be doing business with tomorrow.

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